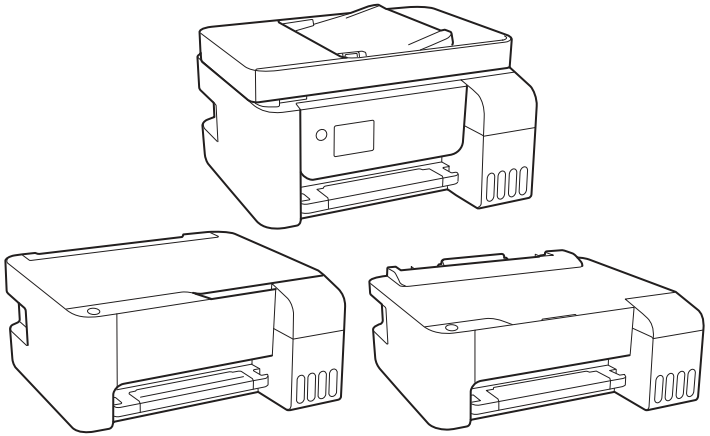
Service Manual



Color Inkjet Printer

EPSON

ET-4800/L5290/L5310 Series

ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series

ET-2400/ET-2810/ET-2860/L3250/L3270 Series

L3210/L3230 Series

L3200 series

L1210/L1230 Series

ET-1810/L1250/L1270 Series

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Service Support Planning Department

Safety Precautions

All safety procedures described here shall be strictly adhered to by all parties servicing and maintaining this product.

DANGER

Strictly observe the following cautions. Failure to comply could result in serious bodily injury or loss of life.

1. Always disconnect the product from the power source and peripheral devices when servicing the product or performing maintenance.
2. When performing works described in this manual, do not connect to a power source until instructed to do so. Connecting to a power source causes high voltage in the power supply unit and some electronic components even if the product power switch is off. If you need to perform the work with the power cable connected to a power source, use extreme caution to avoid electrical shock.

WARNING

Strictly observe the following cautions. Failure to comply may lead to personal injury or loss of life.

1. When using compressed air products; such as air duster, for cleaning during repair and maintenance, the use of such products containing flammable gas is prohibited.

PRECAUTIONS

Strictly observe the following cautions. Failure to comply may lead to personal injury or damage of the product.

1. Repairs on Epson product should be performed only by an Epson certified repair technician.
2. No work should be performed on this product by persons unfamiliar with basic safety knowledge required for electrician.
3. The power rating of this product is indicated on the serial number/rating plate. Never connect this product to the power source whose voltages is different from the rated voltage.
4. Replace malfunctioning components only with those components provided or approved by Epson;
   introduction of second-source ICs or other non-approved components may damage the product and void any applicable Epson warranty.
5. The capacitors on the Main Board may be electrically charged right after the power turns off or after driving motors which generates counter electromotive force such as when rotating the PF Roller or when moving the CR Unit. There is a risk to damage the Main Board if the FFC is short-circuited with the capacitors on the Main Board electrically charged, therefore, after the power turns off or after motors are driven, leave the printer untouched for approximately 30 seconds to discharge the capacitors before starting disassembly/ reassembly.

6. To prevent the circuit boards from short-circuiting, be careful about the following when handling FFC or cables.
   - When handling FFC, take care not to let the terminal section of FFC touch metal parts.
   - When connecting cables/FFC to the connectors on circuit boards, connect them straight to the connectors to avoid slant insertion.
7. In order to protect sensitive microprocessors and circuitry, use static discharge equipment, such as anti-static wrist straps, when accessing internal components.
8. Do not tilt this product immediately after initial ink charge, especially after performing the ink charge several times. Doing so may cause ink to leak from the product because it may take some time for the waste ink pads to completely absorb ink wasted due to the ink charge.
9. Never touch the ink or wasted ink with bare hands. If ink comes into contact with your skin, wash it off with soap and water immediately. If you have a skin irritation, consult a doctor immediately.
10. When disassembling or assembling this product, make sure to wear gloves to avoid injuries from metal parts with sharp edges.
11. Use only recommended tools for disassembling, assembling or adjusting the printer.
12. Observe the specified torque when tightening screws.
13. Be extremely careful not to scratch or contaminate the following parts.
    - Nozzle plate of the printhead
    - CR Scale
    - PF Scale
    - Coated surface of the PF Roller
    - Gears
    - Rollers
    - LCD
    - Scanner Sensor
    - Exterior parts
14. Never use oil or grease other than those specified in this manual. Use of different types of oil or grease may damage the component or give bad influence on the printer function.
15. Apply the specified amount of grease described in this manual.
16. Make the specified adjustments when you disassemble the printer.
17. When cleaning this product, follow the procedure described in this manual.
18. When transporting this product after filling the ink in the printhead, pack the printer without removing the adapters in order to prevent the printhead from drying out.
19. Make sure to install antivirus software in the computers used for the service support activities.
20. Keep the virus pattern file of antivirus software up-to-date.
21. When disassembling/reassembling this product, if you find adhesive power of the double-sided tape which secure the parts or FFC is not enough, replace the tape with new one and attach it correctly to the specified points where the parts or FFC should be secured.
22. Unless otherwise specified in this manual, the labels attached on the returned product should be transferred to the corresponding attachment positions on the new one referring to the labels on the returned product.

About This Manual

This manual, consists of the following chapters, is intended for repair service personnel and includes information necessary for properly performing maintenance and servicing the product.

CHAPTER 1. OPERATING PRINCIPLES

Describes the electrical and mechanical basic operating principles of the product.

CHAPTER 2. TROUBLESHOOTING

Describes the step-by-step procedures for the troubleshooting.

CHAPTER 3. DISASSEMBLY/ASSEMBLY

Describes the disassembly/reassembly procedures for main parts/units of the product, and provides the standard operation time for servicing the product.

CHAPTER 4. ADJUSTMENT

Describes the required adjustments for servicing the product.

CHAPTER 5. MAINTENANCE

Describes maintenance items and procedures for servicing the product.

CHAPTER 6. APPENDIX

Provides the following additional information for reference:

- Connector Diagram
- Protection for Transportation

Symbols Used in this Manual

Various symbols are used throughout this manual either to provide additional information on a specific topic or to warn of possible danger present during a procedure or an action. Pay attention to all symbols when they are used, and always read explanation thoroughly and follow the instructions.

Indicates an operating or maintenance procedure, practice or condition that, if not strictly observed, could result in injury or loss of life.

Indicates an operating or maintenance procedure, practice, or condition that, if not strictly observed, could result in damage to, or destruction of, equipment.

May indicate an operating or maintenance procedure, practice or condition that is necessary to accomplish a task efficiently. It may also provide additional information that is related to a specific subject, or comment on the results achieved through a previous action.

For Chapter 3 “Disassembly/Reassembly”, symbols other than indicated above are used to show additional information for disassembly/reassembly. For the details on those symbols, see "3.3 Disassembly/Reassembly Procedures (p91)".

Revision Status

Revision	Date of Issue	Description
A	April 26, 2021	First release
B	September 30, 2021	Revise ☐ Chapter 3 ■ Made in change in "3.1.4 Standard Operation Time for Servicing the Product (p75)" • Adapt Additional description parts and ASP notation change. ■ Made in change in"3.3.2 Disassembly Flowchart (p92)" • Adapt Additional description parts and ASP notation change. • Flowchart modification (Link correction, Removal of unnecessary lines and parts) [Additional description parts] PF Encoder FFC FFC Holder CR Encoder FFC Head FFC [ASP notation change] Panel Shaft Panel FFC Panel Board Holder LD, Holder LD Assy
C	February 2, 2022	Revise ☐ Chapter 3 ■ Made in change in "3.3.3.2 Scanner Unit, ADF/SCN Unit, Housing Upper Assy (p110)" • Added a note that the screw are not required due to the addition of the scanner open function. ■ Made in change in "3.4 Routing FFCs/cables (p137)" • Changed the titles of " Head FFC/CR Encoder FFC (1;Main Board Side) (p137)" • Added " Head FFC/CR Encoder FFC (2;Print Head Side) (p137)"
D	May 23, 2022	Revise ☐ All Chapter ■ Add models (ET-2400 Series)

Revision	Date of Issue	Description
E	October 28, 2022	Revise ☐ Chapter 2 ■ Revised some descriptions in "2.4 Service Support Mode (ET-4800/L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series only) (p65)" • Made change in the way to put the printer into service support mode. ☐ Chapter 4 ■ Added some descriptions in "4.2.1 Operating Environment (p143)" • Windows 11 has been added. ■ Revised some descriptions in "4.2.2 Adjustment and Inspection List (p143)" • Made change in " Initial Setting (p144)" • " Printer startup mode selection*2 (p147)" has been added.
F	February 16,2023	Revise ☐ Chapter 3 ■ Made in change in"3.3.2 Disassembly Flowchart (p92)" • LD Roller has been added. ■ Made in change in"3.3.3.11 PGU Right Assy/PGU Center Assy (p128)" • Added LD Roller Assembly (p 131). ☐ Chapter 4 ■ Added some descriptions in "4.1 Required Adjustments (p141)" • ADF Type Select has been added in Adjustment item. • ADF Unit has been added in Relevant parts. ■ Revised some descriptions in "4.2.2 Adjustment and Inspection List (p143)" • " ADF Type Select (p145)" has been added.

Revision	Date of Issue	Description
G	October 20, 2023	Revise ☐ All Chapter ■ Add models (L5310/ET-2870/ET-2870U/L3280/ET-2860/L3270/L3230/L1270/L1230 Series) ☐ Chapter 2 ■ Revised some descriptions in"2.4 Service Support Mode (ET-4800/L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series only) (p65)" • Made change in the way to put the printer(ET-4800/L5290/L5310 Series) into service support mode and printer mode. ☐ Chapter 3 ■ Revised some descriptions in"3.1.5.2 Minimizing Ink Leakage during Disassembly for Your Safety (p86)" • Changed the word “alcohol” to “ethanol”. ■ Revised some descriptions in"3.2 Common Cautions on Disassembly/Reassembly (p89)" • Changed the word “alcohol” to “ethanol” in " Scales (p89)". ☐ Chapter 4 ■ Revised some descriptions in"5.1.2 Cleaning the Exterior Parts/inside of the printer (p157)" • Changed the word “alcohol” to “ethanol”.
H	November 16, 2023	Revise ☐ All Chapter Model name correction (L3180 to L3280)

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CHAPTER

1

OPERATING PRINCIPLES

1.1 Printer Mechanism Overview

This chapter describes overview of each mechanism inside the printer.

CHECK

Since the basic mechanisms of the product are the same, in this chapter, illustration of ET-2400/ET-2810/ET-2860/ L3250/L3270 Series is used unless otherwise specified.

1.1.1 Print Head

F2 head is used for ET-4800/L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ ET-2870U/L3260/L3280 Series/ET-2400/ET-2810/ET-2860/L3250/L3270 Series/L3210/L3230 Series/L3200 Series/L1210/L1230 Series/ET-1810/ L1250/L1270 Series.

Table 1-1. Nozzle Configuration

Color	Four colors: black (Bk), cyan (C), magenta (M), yellow (Y)
Number of nozzles	357 nozzles: 180 nozzles for Bk, 59 nozzles for each Y, M, and C.
Nozzle pitch	180 dpi

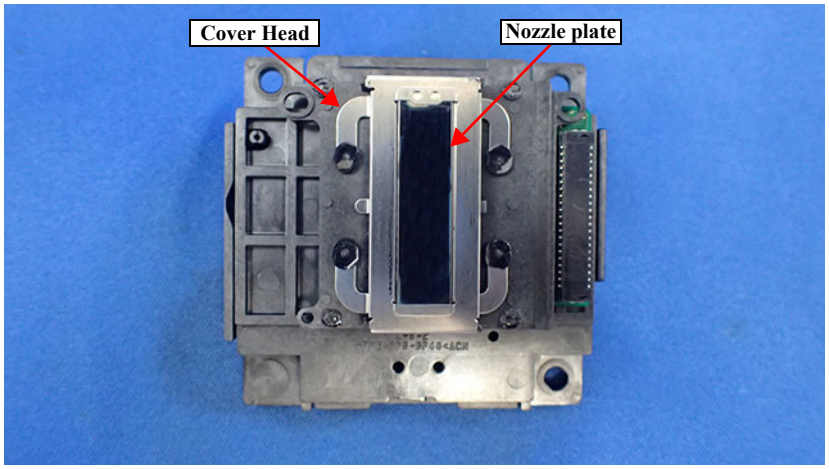
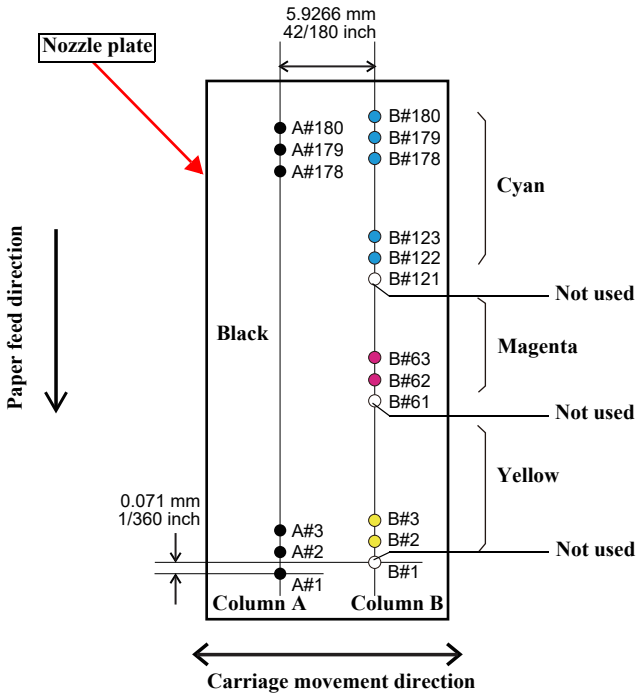


Figure 1-1. F2 Print Head appearance



Column	Color
A	Bk
B #1 - #60	Y
B #62 - #120	M
B #122 - #180	C

Figure 1-2. Nozzle layout (seen from the rear side)

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1.1.2 Carriage (CR) Mechanism

The major components of the carriage (CR) mechanism are the CR Unit, CR Encoder Sensor, CR Scale, CR Motor, and CR Timing Belt. The CR mechanism is a key mechanism to ensure stable print quality because printing is performed by moving the CR Unit from side to side.

As shown on the right, Main Frame is holding the upper side and the lower side of the CR Unit. The CR Unit is attached to the CR Timing Belt that is moved by the CR Motor so that the assy can move from side to side to print. The position and speed of the CR Unit are always monitored by the CR Encoder Sensor and the CR Scale, and the CR Motor is controlled in accordance with the information acquired by the CR Encoder Sensor.

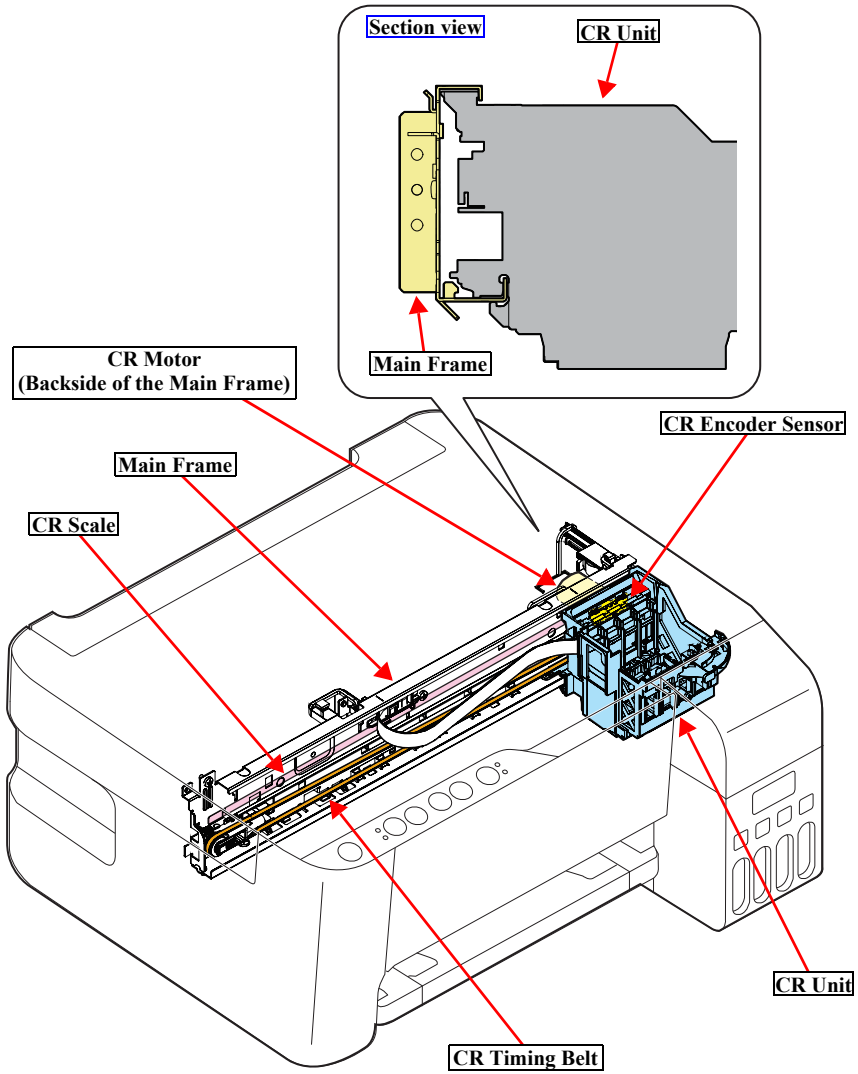


Figure 1-3. Carriage (CR) mechanism

1.1.3 Paper Loading/Feed Mechanism

This printer employs a rear feeding mechanism and paper is loaded by the drive force of the PF Motor.

Paper is fed inside the printer from the ASF Rear by the Shaft LD Assy.

The ASF Rear is equipped with a Hopper, Paper Back Lever, Change Lever, Shaft LD Assy, and clutch. The Change Lever and the clutch work for transmitting a driving force from the PF Motor to the Shaft LD Assy and for not transmitting it.

The Hopper and the Paper Back Lever driven by the cam on the LD Roller Shaft prevent multi-feed and ensure accurate paper feeding.

Paper fed by the ASF Rear is conveyed by the PF Roller Assy and the EJ Roller which are included in the paper feeding mechanism.

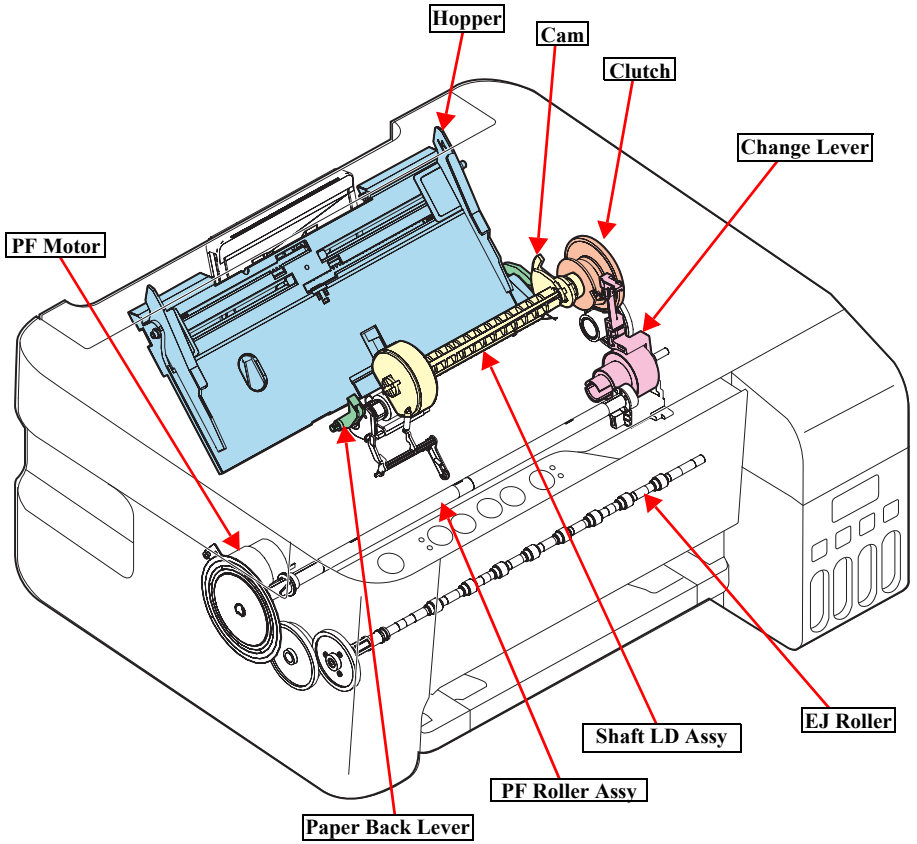


Figure 1-4. Paper loading/feed mechanism (2)

1.1.4 Ink System Mechanism

The major components of the ink system mechanism*1 are a cap, pump unit, and waste ink tube.

The ink system mechanism employs the slide type capping. When the CR Unit returns to its capping position (home position), the Print Head is capped. The pump mechanism, wiper mechanism, and the CR Lock mechanism are driven by the PF Motor to clean the Print Head.

Waste ink sucked when cleaning the Print Head is collected in the Porous Pad Assy through the pump mechanism.

This printer employs a porous pad which cannot be replaced by customers. The amount of waste ink is monitored in the EEPROM in the Main Board.

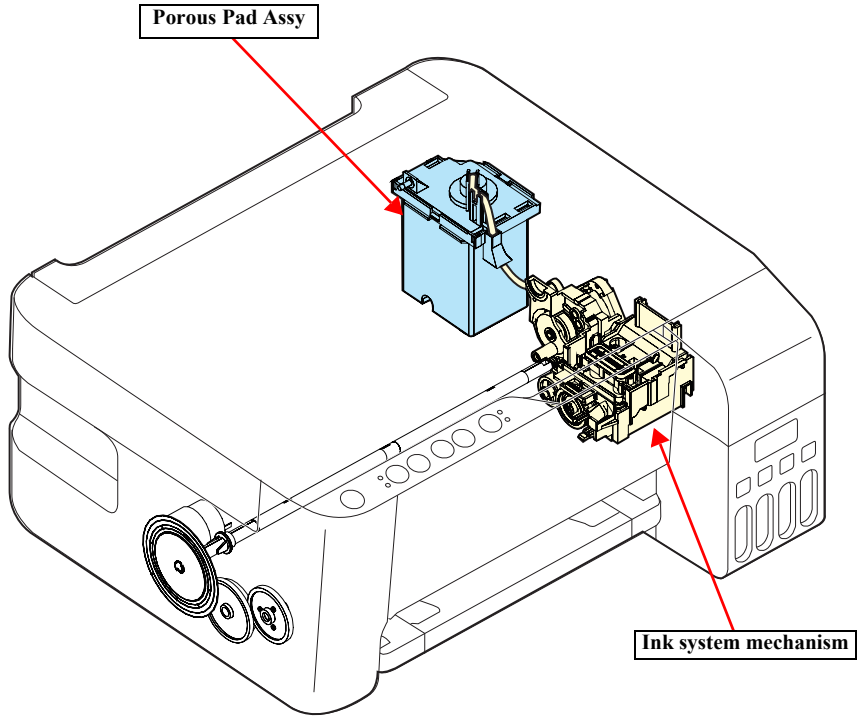


Figure 1-5. Ink system mechanism

*1. See "1.4 Ink System Mechanism" (p 26) for more details.

1.1.5 List of Motor and Sensor

This section describes the types and positions of the motors and sensors.

☐ ET-4800/L5290/L5310 Series

Table 1-2. Motor and Sensor List

Mechanism name	Motor/sensor name	Motor/sensor type	No.
Carriage mechanism	CR Motor Assy	DC Motor	A
	CR Encoder	Transmission-type photo interrupter	1
Paper loading/feed mechanism	PF Motor Assy	DC Motor	B
	ASF Rear Paper Existence Sensor	Transmission-type photo interrupter	2
	PE Sensor*	Transmission-type photo interrupter	3
	PF Encoder	Transmission-type photo interrupter	4
ADF/Scanner	Scanner Motor	DC Motor	C
	Scanner Motor Encoder	Transmission-type photo interrupter	5
	ADF PE Sensor	Transmission-type photo interrupter	6

Note "*": The PE Sensor is equipped on the Main Board.

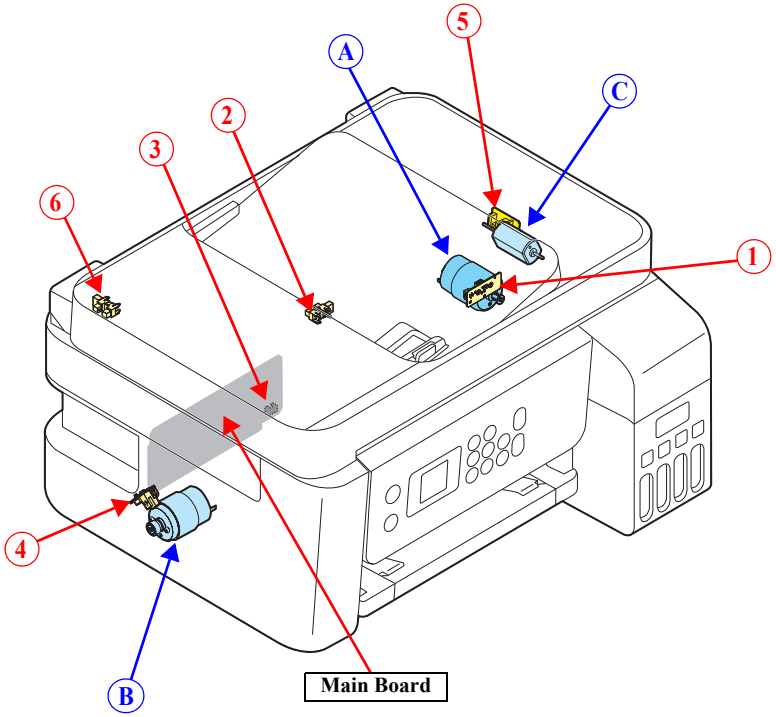


Figure 1-6. List of motor and sensor (ET-4800/L5290/L5310 Series)

☐ ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series,ET-2400/ET-2810/ET-2860/L3250/L3270 Series, L3210/L3230 Series, L3200 Series

Table 1-3. Motor and Sensor List

Mechanism name	Motor/sensor name	Motor/sensor type	No.
Carriage mechanism	CR Motor Assy	DC Motor	A
	CR Encoder	Transmission-type photo interrupter	1
Paper loading/feed mechanism	PF Motor Assy	DC Motor	B
	ASF Rear Paper Existence Sensor (Only for ET-2800/ ET-2820/ET-2870/ ET-2870U/L3260/ L3280 Series)	Transmission-type photo interrupter	2
	PE Sensor*	Transmission-type photo interrupter	3
	PF Encoder	Transmission-type photo interrupter	4
Scanner	Scanner Motor	Stepping Motor	C

Note "*": The PE Sensor is equipped on the Main Board.

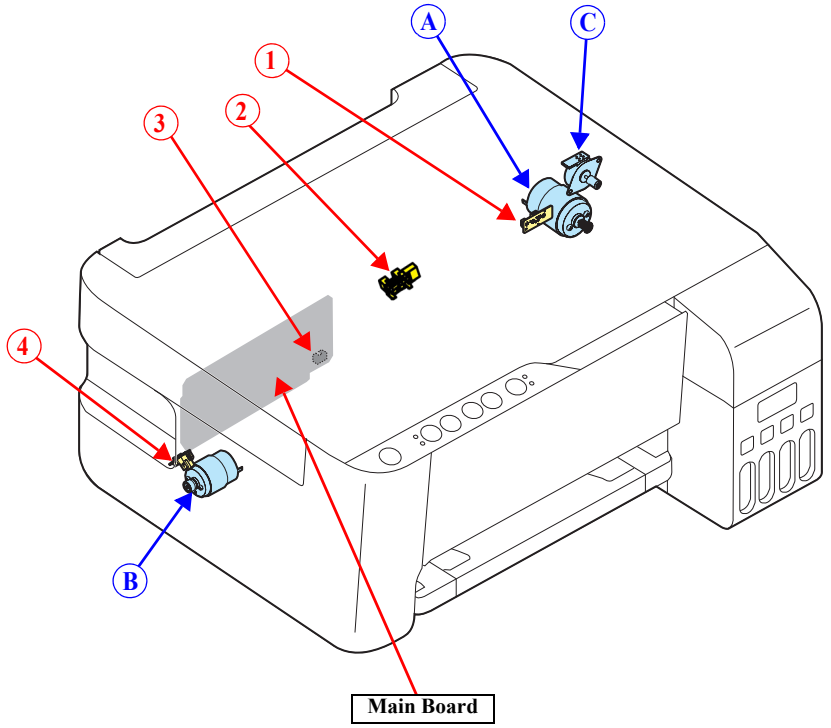


Figure 1-7. List of motor and sensor (ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series,ET-2400/ET-2810/ET-2860/L3250/L3270 Series, L3210/L3230 Series, L3200 Series)

☐ L1210/L1230 Series/ET-1810/L1250/L1270 Series

Table 1-4. Motor and Sensor List

Mechanism name	Motor/sensor name	Motor/sensor type	No.
Carriage mechanism	CR Motor Assy	DC Motor	A
	CR Encoder	Transmission-type photo interrupter	1
Paper loading/feed mechanism	PF Motor Assy	DC Motor	B
	PE Sensor*	Transmission-type photo interrupter	2
	PF Encoder	Transmission-type photo interrupter	3

Note "*": The PE Sensor is equipped on the Main Board.

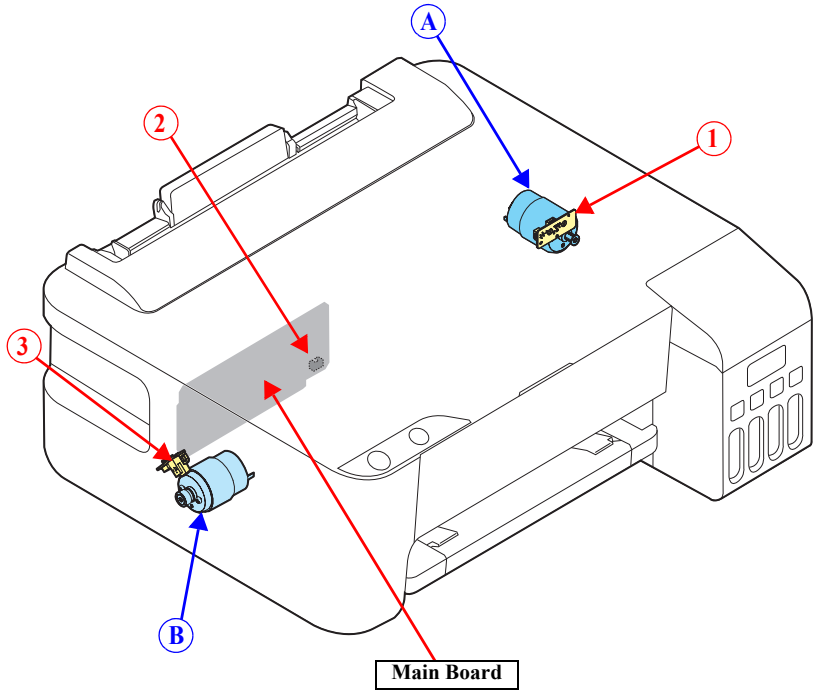


Figure 1-8. List of motor and sensor (L1210/L1230 Series)

1.2 Scanner/ADF Overview (Except for L1210/L1230 Series/ET-1810/L1250/L1270 Series)

1.2.1 Scanner Mechanism

The scanner mechanism consists of a CIS sensor that scans documents and the Scanner motor that drives the scanner carriage. The CIS sensor and the Scanner motor are integrated as the scanner carriage, and it moves along the rail on the scanner housing to scan documents.

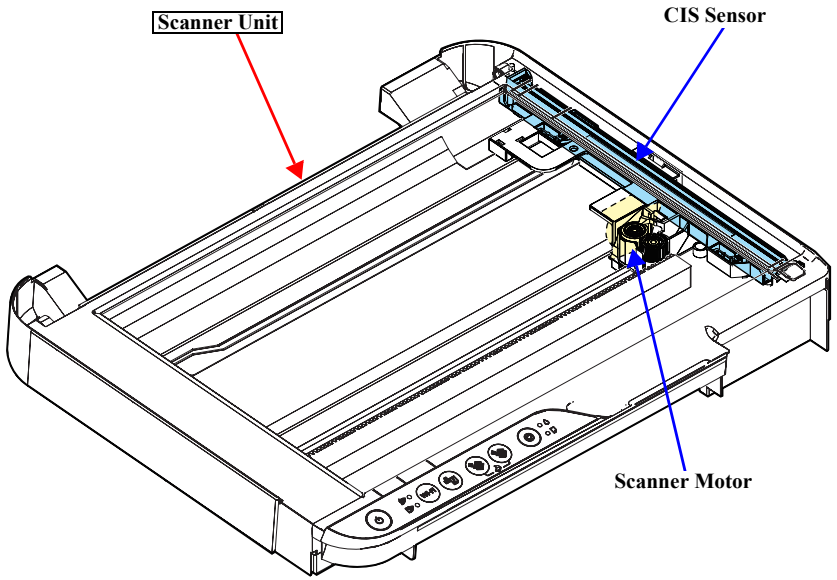


Figure 1-9. Scanner mechanism

1.2.2 ADF Mechanism (ET-4800/L5290/L5310 Series only)

The PF Roller, EJ Roller, and Pick up Roller of the ADF mechanism are driven by the Scanner Motor. The drive force of the motor is transmitted through the transmission gear. The ADF mechanism does not support auto duplex scanning.

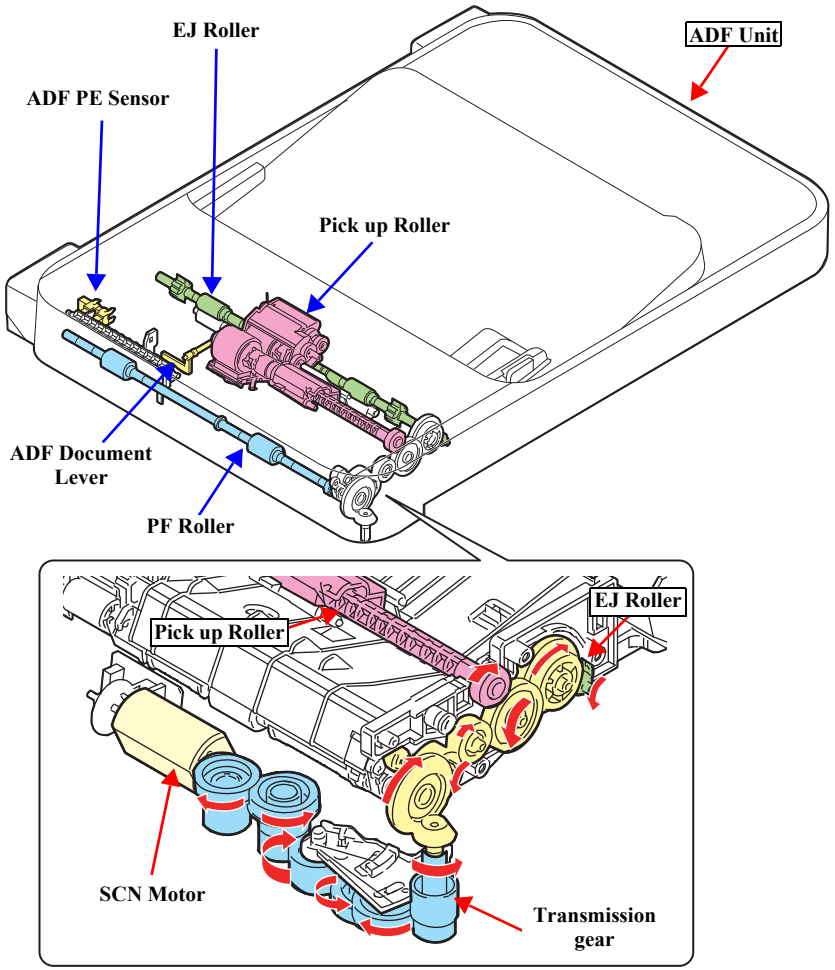


Figure 1-10. ADF mechanism

When scanning document, the document is fed inside the ADF as shown below.

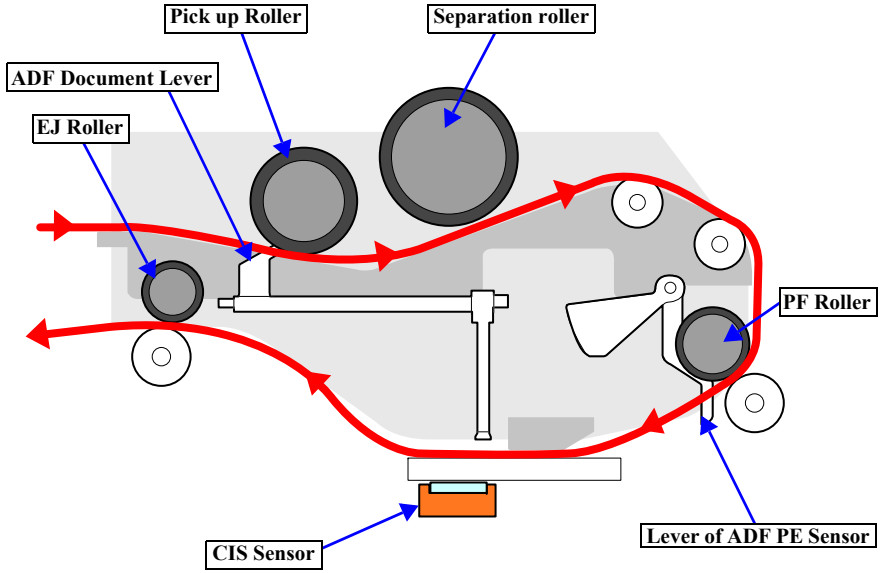


Figure 1-11. Document Feed Path

Presence or absence of document on the ADF is detected by the ADF Document Lever and the scanner CIS Sensor. The lever moves up or down depending on the presence or absence of document, and the end of the lever is scanned by the CIS Sensor. According to the scan result, the printer determines whether document is present or not.

Additionally, there is a Sub Document Lever beside the ADF Document Lever. If the CIS Sensor cannot scan the end of the Sub Document Lever, the printer determines that the scanner (SCN) unit is open or the CIS Sensor is malfunctioning.

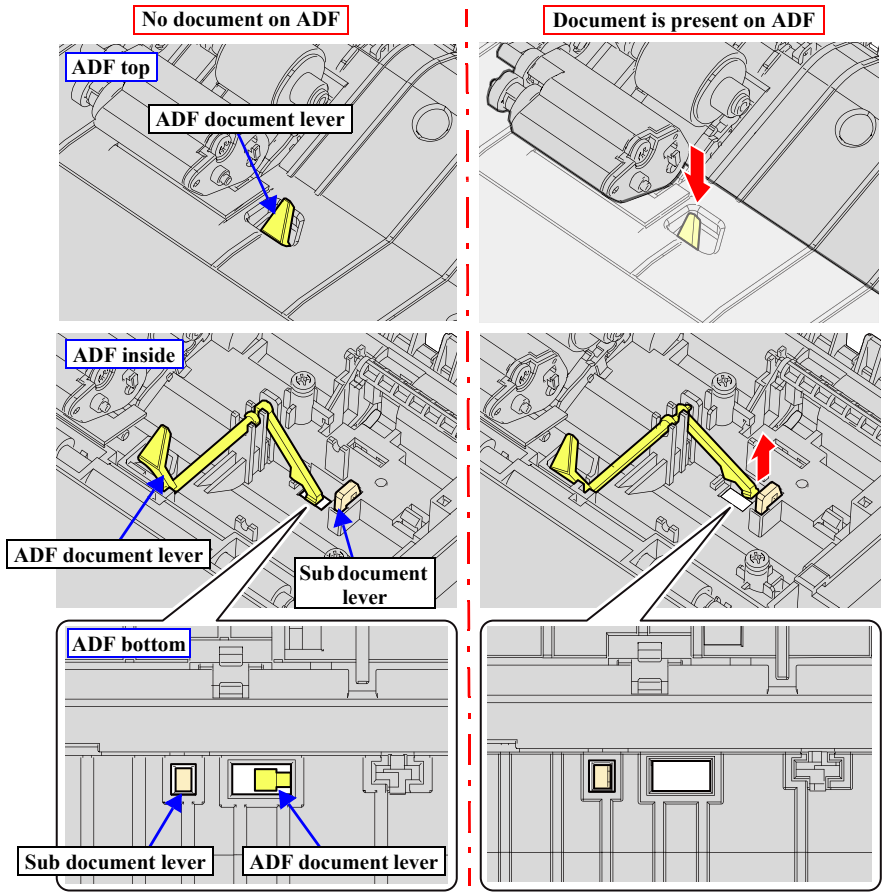


Figure 1-12. ADF document lever

1.3 Paper Loading/Feed Mechanism

1.3.1 Overview

1.3.1.1 Paper Loading Method

The paper loading mechanism from the Rear ASF and the paper feed mechanism are both driven by the PF motor.

Table 1-5. Paper Loading Method and Drive Force

Drive force (motor)	Motor control	Paper loading operation
PF Motor	PF encoder/ PF scale	• Drive the Shaft LD Assy and load paper from the ASF Rear. • Drive the Hopper/Paper Back Lever to prevent multi-feed. • Drive the PF Roller/EJ Roller to convey the paper.

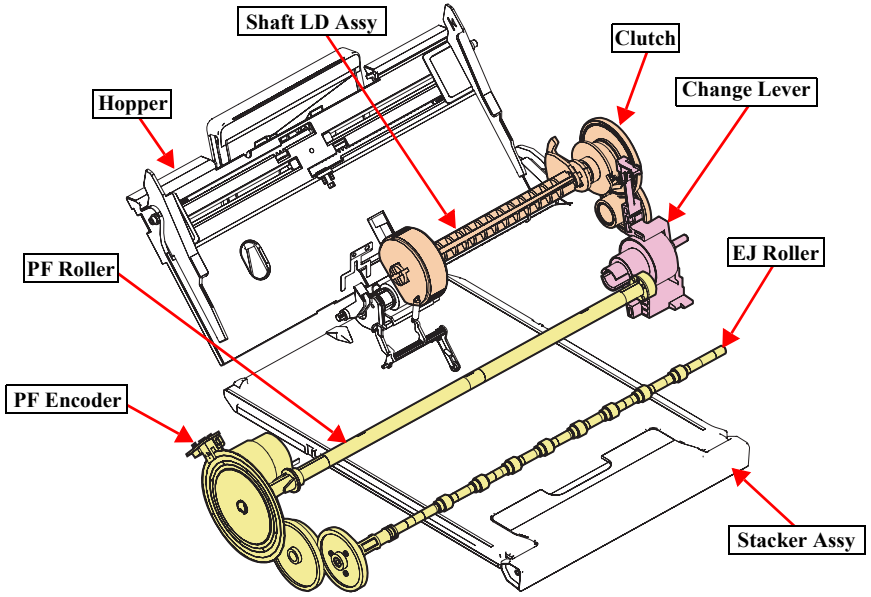


Figure 1-13. Paper loading/feed mechanism

1.3.1.2 Paper Feed Path

Paper put on the Hopper is fed by the Shaft LD Assy and arrives at the PE Sensor position.

Next, skew is corrected, and printing on the paper is performed while the paper is being fed by the PF roller and EJ Roller/Holder Starwheel Assy, then the paper is ejected to the Stacker Assy.

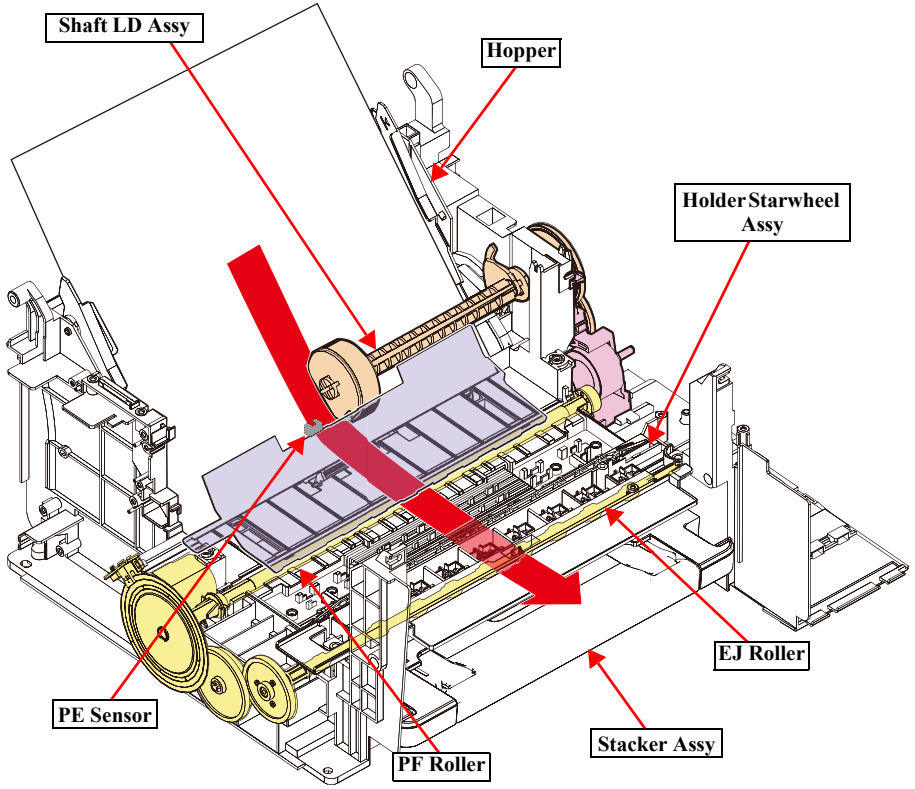


Figure 1-14. Paper feed path of rear paper loading

1.3.2 Operating Principles

1.3.2.1 Drive Path

The driving force of the PF Motor is transmitted to the PF Roller and the EJ Roller through the compound gear and the spur gear, and then transmitted from the PF Roller to the paper feed mechanism. The driving force of the PF motor is also transmitted to the Rear ASF Mechanism. (p 24)

DRIVE PATH FROM PF MOTOR TO PF ROLLER/EJ ROLLER

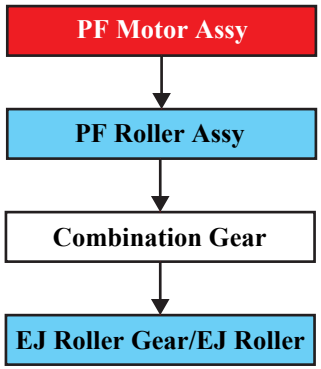


Figure 1-15. Drive path from PF Motor to PF Roller/EJ Roller (1)

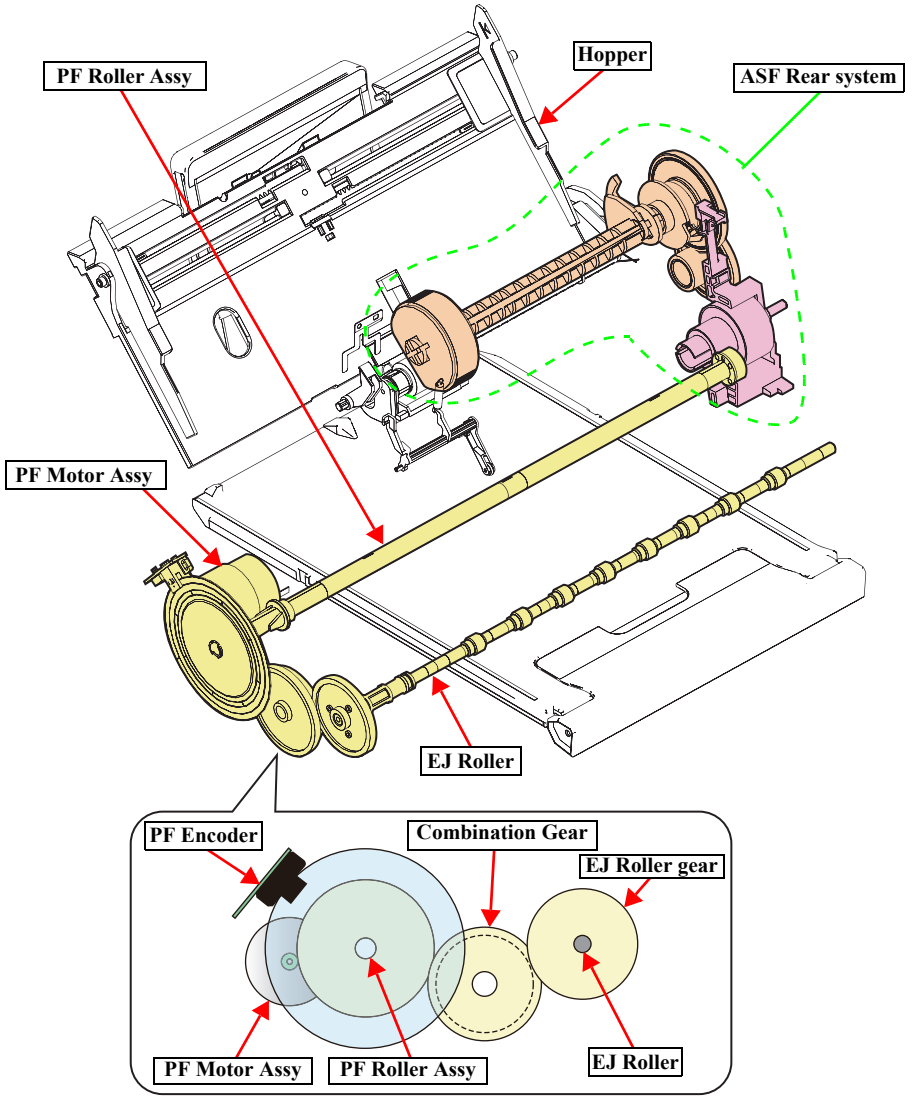


Figure 1-16. Drive path from PF Motor to PF Roller/EJ Roller (2)

DRIVE PATH FROM PF ROLLER TO LD ROLLER (ASF REAR SYSTEM)

The drive force of the PF Motor is transmitted to the LD Roller through the PF Roller, Change Lever (Compound gear 28.8, 18) and the clutch. The Hopper and the Paper Back Lever is driven by the cam linked to the LD Roller.

Since the PF Motor also drives the paper feed mechanism and the ink system mechanism, transmission of the drive force to the LD Roller is controlled by the Change Lever and the clutch so that the LD Roller rotates only when loading paper.*1

Relation between the rotational direction of the PF Motor and the motion of the LD Roller are shown below.

PF Motor rotational direction	Motion of LD Roller
Paper feed direction	The clutch transmits or does not transmit the drive force to the LD Roller in relation to the Change Lever. When transmitted, the LD Roller rotates in the paper feed direction.
Opposite to the paper feed direction	The LD Roller does not rotate since the drive force is disengaged by the clutch.

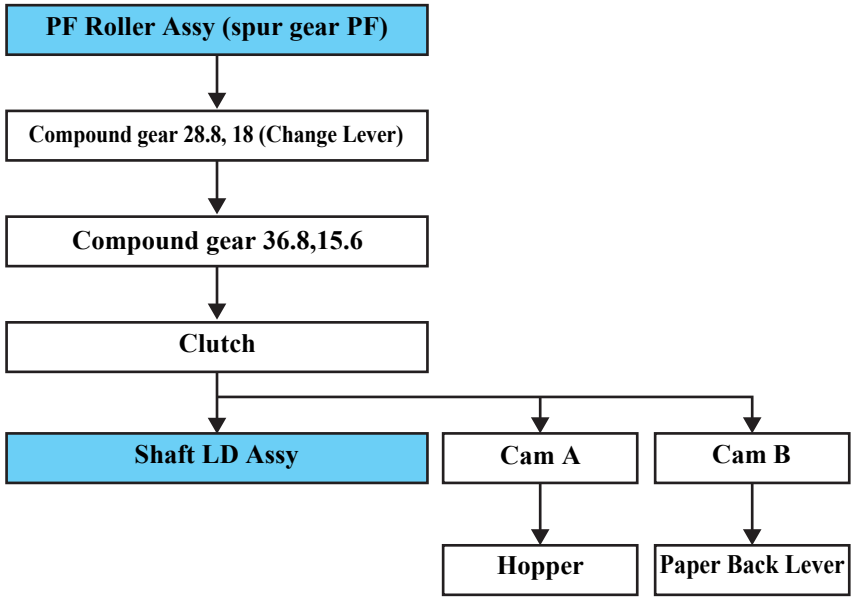


Figure 1-17. Drive Path From PF Roller to LD Roller (1)

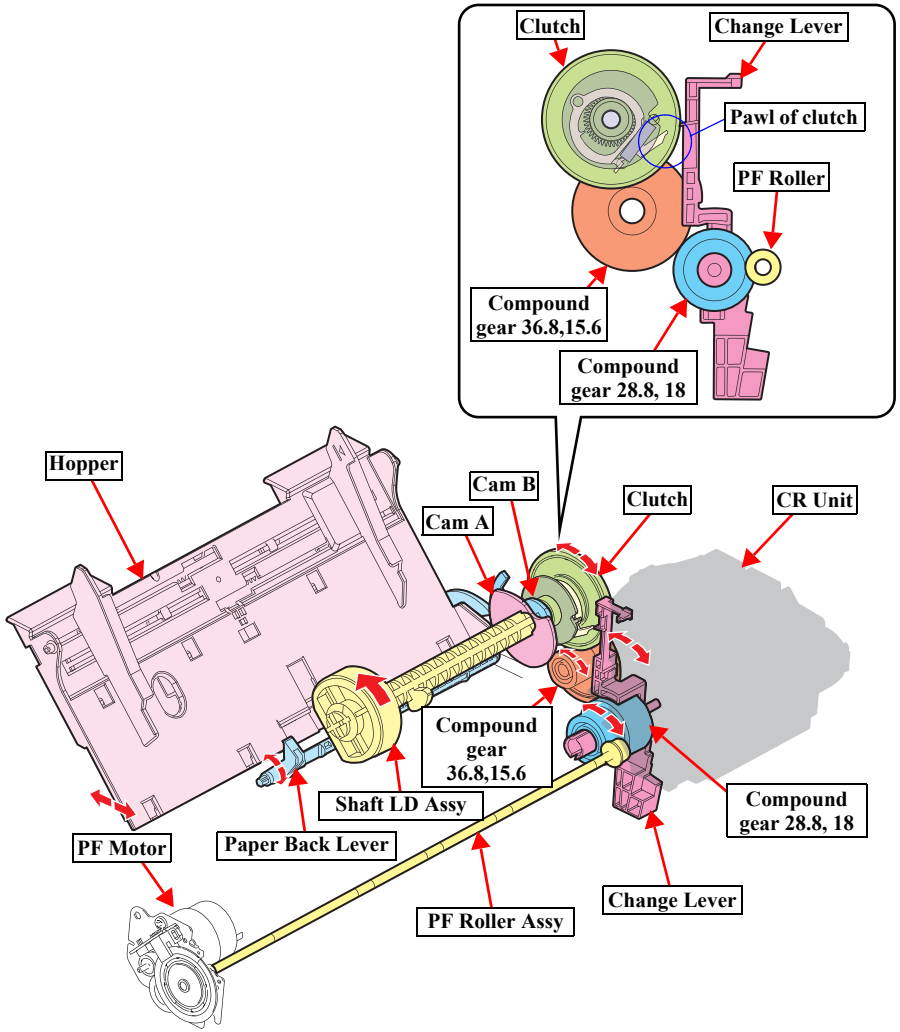


Figure 1-18. Drive Path From PF Roller to LD Roller (2)

*1. See " Operation of Paper Loading Mechanism" (p 25) for more details.

OPERATION OF PAPER LOADING MECHANISM

The following describes how the Change Lever and the clutch work for transmitting or not transmitting the PF Motor drive force to perform paper feeding.

☐ Drive force control by the Change Lever and clutch

When the Change Lever holds the pawl of the clutch (ASF lock state), the clutch is disengaged and the drive force of the PF Motor is not transmitted to the Shaft LD Assy.

When the Change Lever releases the pawl of the clutch (ASF unlock/ASF drive state), the clutch is engaged and the drive force of the PF Motor is transmitted to the Shaft LD Assy.

☐ Normal operation

While the CR Unit is in the home position, it prevents the Change Lever from leaning toward the front side. Therefore, the Change Lever keeps the ASF lock state regardless of the rotation direction of the PF Motor and the clutch is disengaged to shut off the drive force of the PF Motor to the Shaft LD Assy.

Even when the CR Unit is not in the home position for printing or other reason, the ASF lock state is kept to shut off the drive force to the Shaft LD Assy as long as the PF Motor rotates CW (in the paper feed direction).

☐ Operation at paper loading

When the printer starts loading paper, the CR Unit moves away from the home position and the PF Motor starts rotating CCW. This causes the Change Lever to lean toward the front side and the ASF is unlocked. Then, the clutch is engaged, and the drive force of the PF Motor is transmitted to the Shaft LD Assy.

After the ASF is unlocked, the PF Motor starts rotating CW, and the Shaft LD Assy starts rotating in the paper feed direction. The Shaft LD Assy and the Retard Roller separate a sheet of paper from the other sheets on the Hopper and feed it into the printer. At this point, the Change Lever has returned to the original position (leaning toward the rear side).

After the Shaft LD Assy rotates once, the Change Lever holds the pawl of the clutch and the ASF is locked. Then, the drive force of the PF Motor to the Shaft LD Assy is shut off, and the paper loading ends.*1

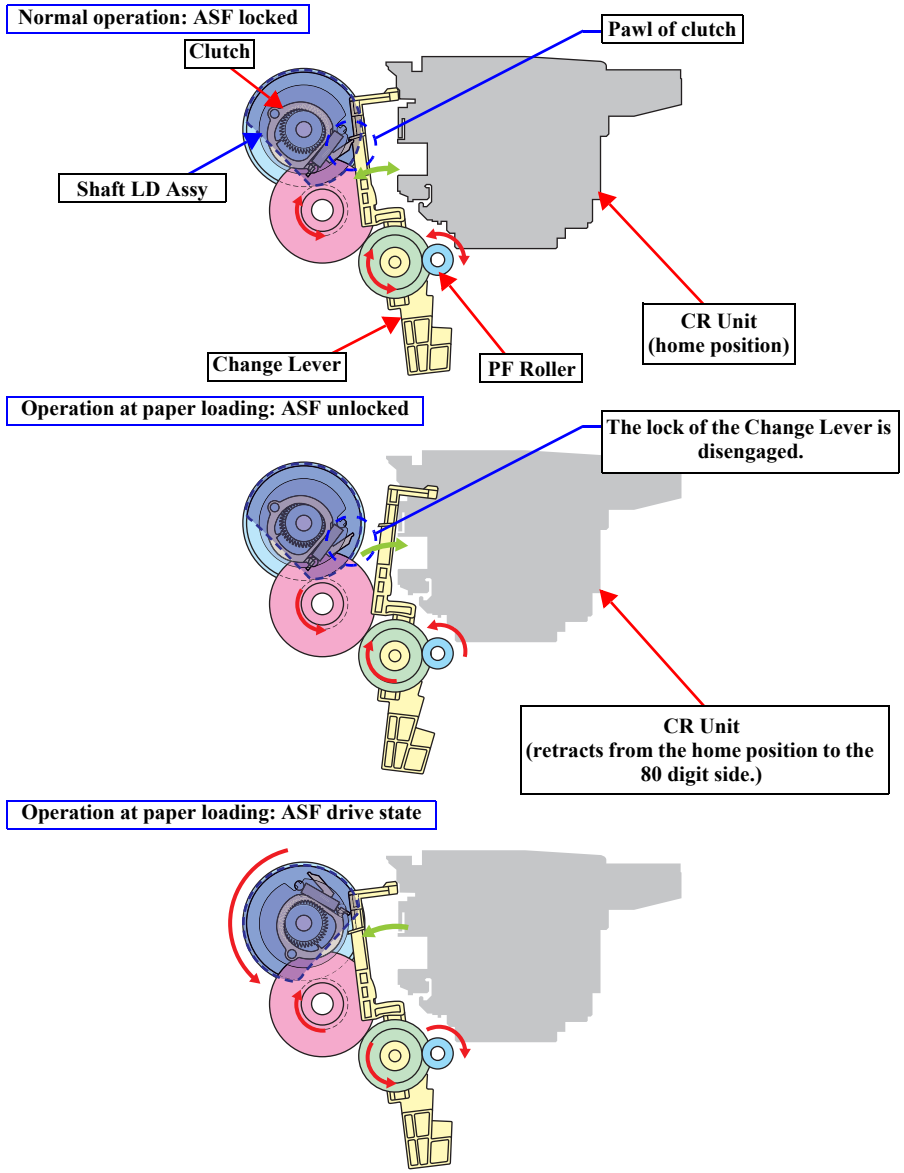

Normal operation: ASF locked
Clutch
Pawl of clutch
Shaft LD Assy
CR Unit
(home position)
Change Lever
PF Roller
Operation at paper loading: ASF unlocked
The lock of the Change Lever is disengaged.
CR Unit
(retracts from the home position to the 80 digit side.)
Operation at paper loading: ASF drive state

Figure 1-19. Operation of Paper Loading Mechanism (seen from 80 digit side)

*1. The Shaft LD Assy is shaped in a character of D. Because of this shape, the Shaft LD Assy and Retard Roller can release a sheet when the sheet reaches the PF Roller so that the paper feed by the PF Roller is not affected.

1.4 Ink System Mechanism

1.4.1 Overview

1.4.1.1 Mechanical Configuration

The ink system mechanism of this product employs the sliding type*1 and consists of the CR Lock mechanism, wiper mechanism, capping mechanism, and pump mechanism.

All the mechanisms are driven by the PF Motor. The drive force of the PF Motor is transmitted to each mechanism via transmission parts, such as the pump-drive compound gear, clutch gear, and cam.

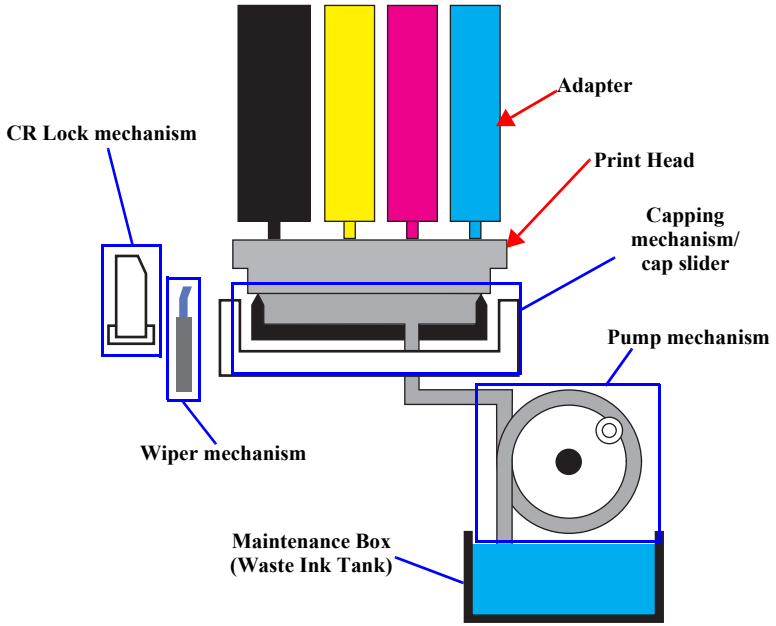


Figure 1-20. Ink system mechanism (simplified model)

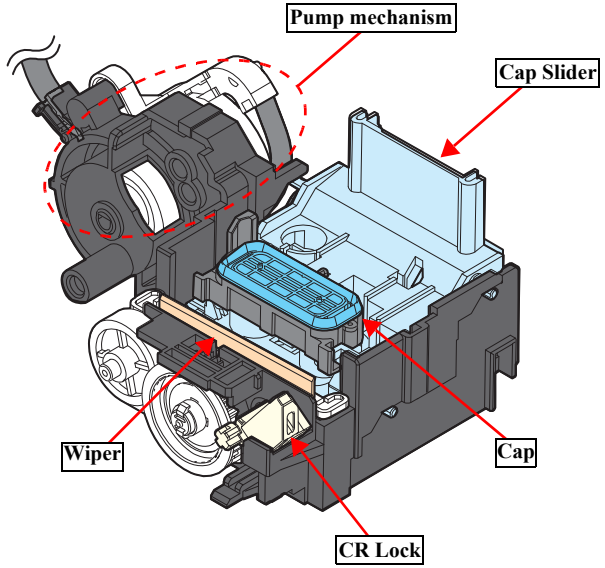


Figure 1-21. Ink system mechanism

*1. There are two types of the capping: sliding type and direct acting type. In the sliding type, the Print Head is capped (the cap is moved up) when the CR pushes the cap slider. In the direct acting type, the cap moves up and down independently of the CR and caps the Print Head.

1.4.1.2 Cleaning

Clogging of nozzles on the Print Head occurs due to air bubbles generated inside the ink path of the Print Head, or an increase in ink viscosity caused by drying of ink. To prevent the clogging or clean the clogged nozzles, various types of cleaning (CL) are performed at different times as described in the table below.

Table 1-6. Print Head cleanings

CL Type		Purpose	Explanation
Initial ink charge		To fill the head with ink	Performed after the printer is powered at the first time.
Timer cleaning (TCL)*1		To eject bigger air bubbles inside the Print Head	Performed according to the printing time and time elapsed since the last cleaning.
Manual cleaning (MCL)*2	CL1	To restore a proper convex meniscus of ink at the tip of nozzles	Main suction*3(short) → Wiping*4 → Cap suction*5 → Small amount suction*6 → Cap suction
	CL2	To eject air bubbles inside the Print Head	Main suction (middle) → Wiping → Cap suction → Small amount suction → Cap suction
	CL3*7	To eject air bubbles inside the ink supply nozzles	Main suction (long) → Wiping → Cap suction → Small amount suction → Cap suction
Regular cap suction		To prevent ink leakage from the cap	Sucks out ink pooling inside the cap due to head flushing operations or the like.
Flushing		To prevent ink inside non-used nozzles from increasing its viscosity	The Print Head is controlled to fire ink droplets from the nozzles periodically.

*1. To save ink, the time between the timer cleanings is becoming longer on the most newer printers. This is achieved by adopting the plastic that have the function to suppress the growth of air bubbles inside the Print Head and by improving in shape of the ink supply nozzles.

*2. When carrying out manual cleaning, CL1 → CL2 → CL3 are automatically selected and performed in order. However, in the following conditions, they may not be carried out in this order.
(EX) ·CL3 may change to CL2 depending on the ink remaining quantity and conditions of maintenance counter and others.
·If the interval between cleaning is more than a specified period, then this may not be counted as continuous.

*3. "Main suction" is a suction operation that sucks up ink from cartridges to the Print Head, and at the same time, sucks out air bubbles inside the Print Head and thick ink inside the nozzles.

*4. "Wiping" removes ink attached to the Print Head nozzle surface.

*5. "Cap suction" is a suction operation that sucks ink out of the cap.

*6. "Small amount suction" is a suction operation performed to eject tiny air bubbles from the Print Head. Ink amount sucked by this operation is less than that by the "Main suction".

*7. Some off-carriage type printers use a choke valve mechanism to perform the cleaning.

1.4.1.3 Controlling Waste Ink

Ink used by cleanings (waste ink) is absorbed by the waste ink pad in the Porous Pad Assy. If the absorbed amount exceeds the limit of the waste ink pad, leakage of the waste ink can occur. To prevent this, the printer firmware has a counter to counts the waste ink amount taking evaporation into account, The count value is retained in the EEPROM.

Another waste ink produced by borderless printing is absorbed by Porous Pad PG Front attached on the Frame Base Assy. For the borderless printing, the printer makes an image slightly expand all the way to the edge of the paper, therefore, the image edge portions not printed on paper must be absorbed. Some printers also have the counter for this waste ink amount.

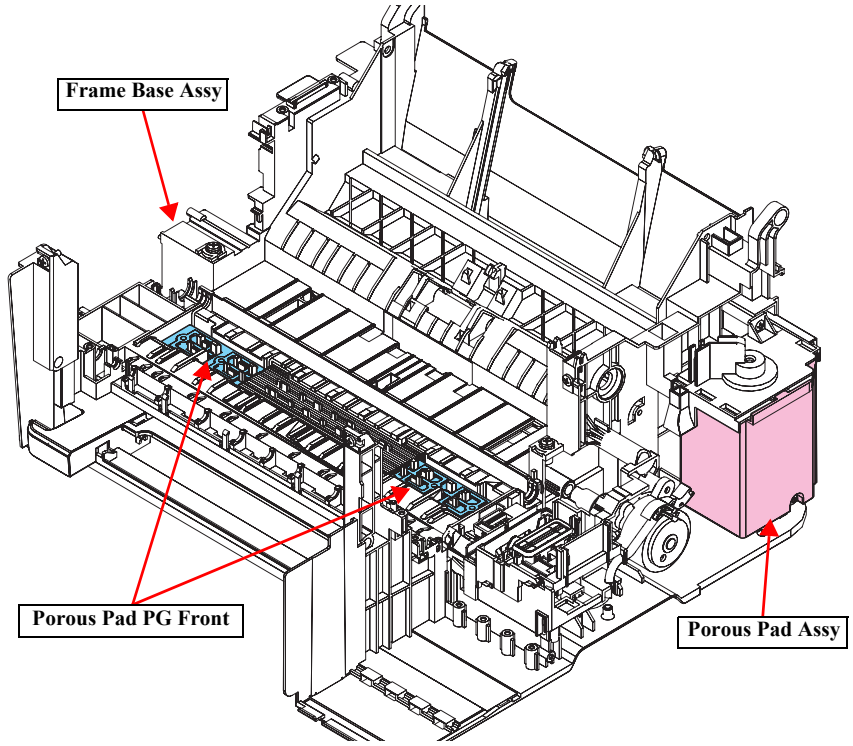


Figure 1-22. Position of Waste Ink Pad for Borderless Printing

If each counter reaches its limit, a maintenance error occurs and replacement of the Porous Pad Assy, or replacement of the waste ink pad and counter reset will be required.

1.4.2 Operating Principles

1.4.2.1 Drive Path

The ink system mechanism is driven by the PF Motor.

To the pump mechanism, the drive force is constantly transmitted via the PF Roller, compound gear, Pump driving gear, and etc.

The drive force is transmitted to the wiper mechanism and CR Lock mechanism via the PF Roller, spur gear, compound gear equipped with a clutch, and cam. The clutch works in accordance with movement of the cap slider and cam, and interrupts the drive force upon completion of the movement.

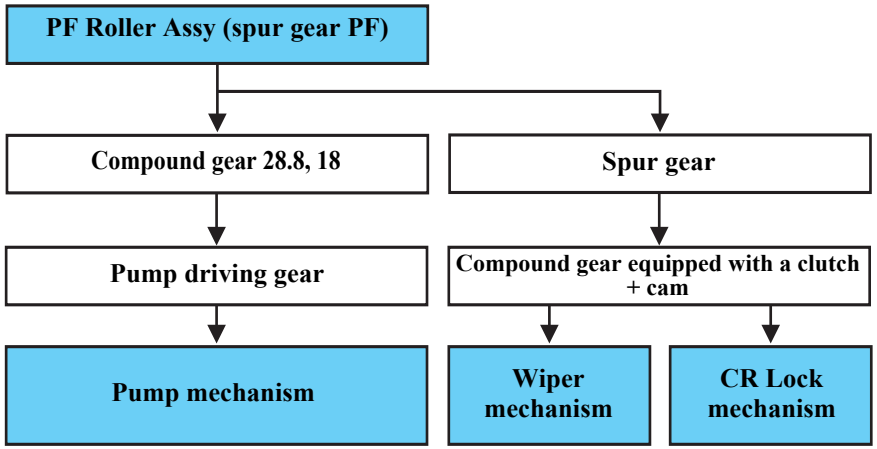


Figure 1-23. Drive path (1)

The table below shows how each mechanism operates according to the rotational direction of the PF Motor.

Table 1-7. PF motor rotational direction and operation of the ink system

Mechanism	Rotational direction of the PF Motor*1	
	CW	CCW
Wiper	Moves down	Moves up (wiping position)
Pump	Release	Suction
CR Lock	Unlocks the CR	Locks the CR

*1. Rotational direction seen from output shaft

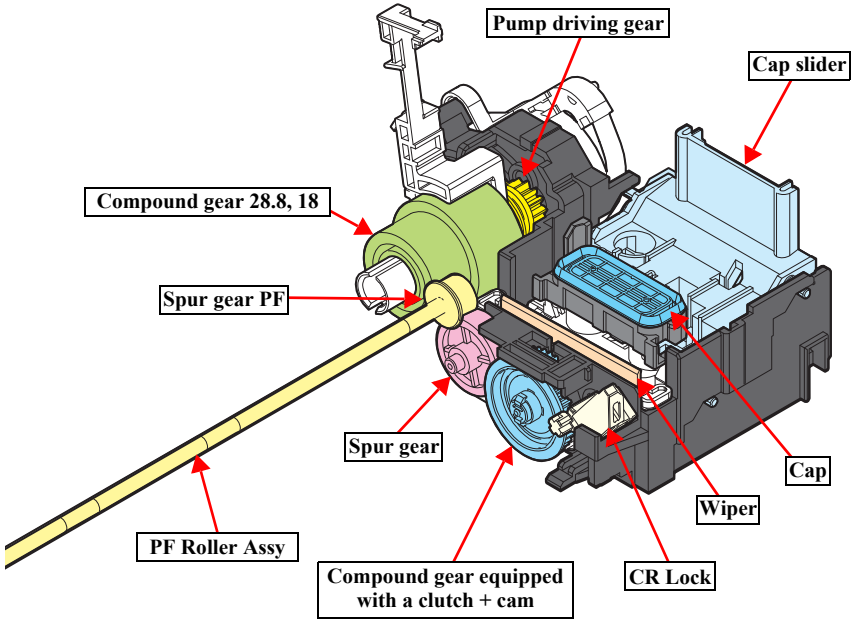


Figure 1-24. Drive path (2)

1.4.2.2 Operation of Each Mechanism

1.4.2.2.1 Pump Mechanism

The pump mechanism sucks ink from the Print Head at cleaning.

The drive force from the pump-drive compound gear is transmitted to the pump shaft via the timing plate. This timing plate allows the pump-drive compound gear to start rotating at the different timing from the pump shaft. After the PF Motor rotates for a while, the pump unit starts its operation.

When the pump motor rotates counter-clock wise as seen from the output-shaft side of the motor, the drive force via the pump-drive compound gear rotates the pump pulley to flatten the tube to suck the air (to generate negative pressure) inside the tube. When the pump motor rotates clock wise, the pump pulley does not flatten the tube, and the negative pressure is released.

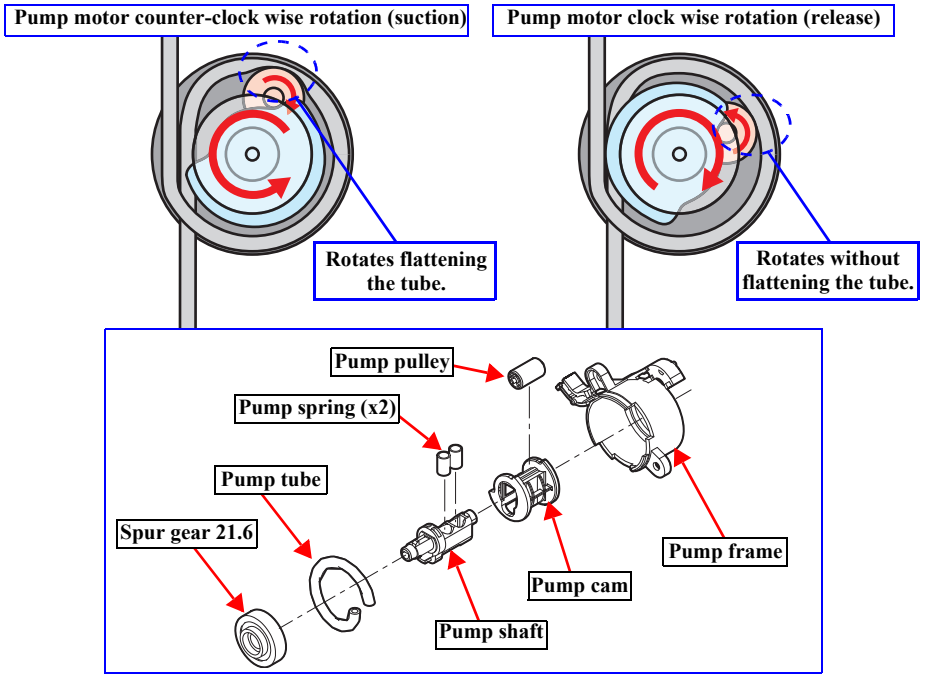


Figure 1-25. Pump mechanism operations

1.4.2.2.2 Capping Mechanism

When the CR Unit returns to its home position, the cap slider pressed by the CR Unit moves upward to cap the Print Head. When the CR Unit moves away from the home position, the cap slider moves downward and the Print Head is uncapped and released from the vacuum state. The ink system for this product does not have a valve for canceling the vacuum state, but the cap slider moved by the CR Unit provides the same function as the valve.

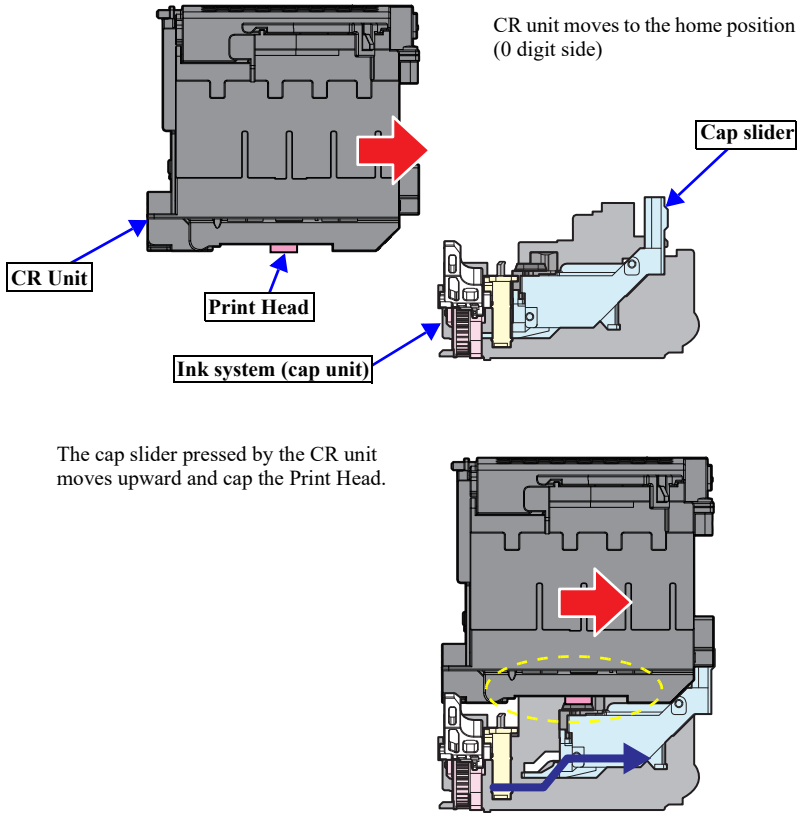

CR unit moves to the home position
(0 digit side)
Cap slider
CR Unit
Print Head
Ink system (cap unit)
The cap slider pressed by the CR unit moves upward and cap the Print Head.

Figure 1-26. Capping mechanism operations

Confidential

1.4.2.2.3 Wiper Mechanism

The wiper moves in synchronization with the capping operation. The PF motor drive transmitted through the compound gear set and cam equipped with clutch moves the wiper up or down.

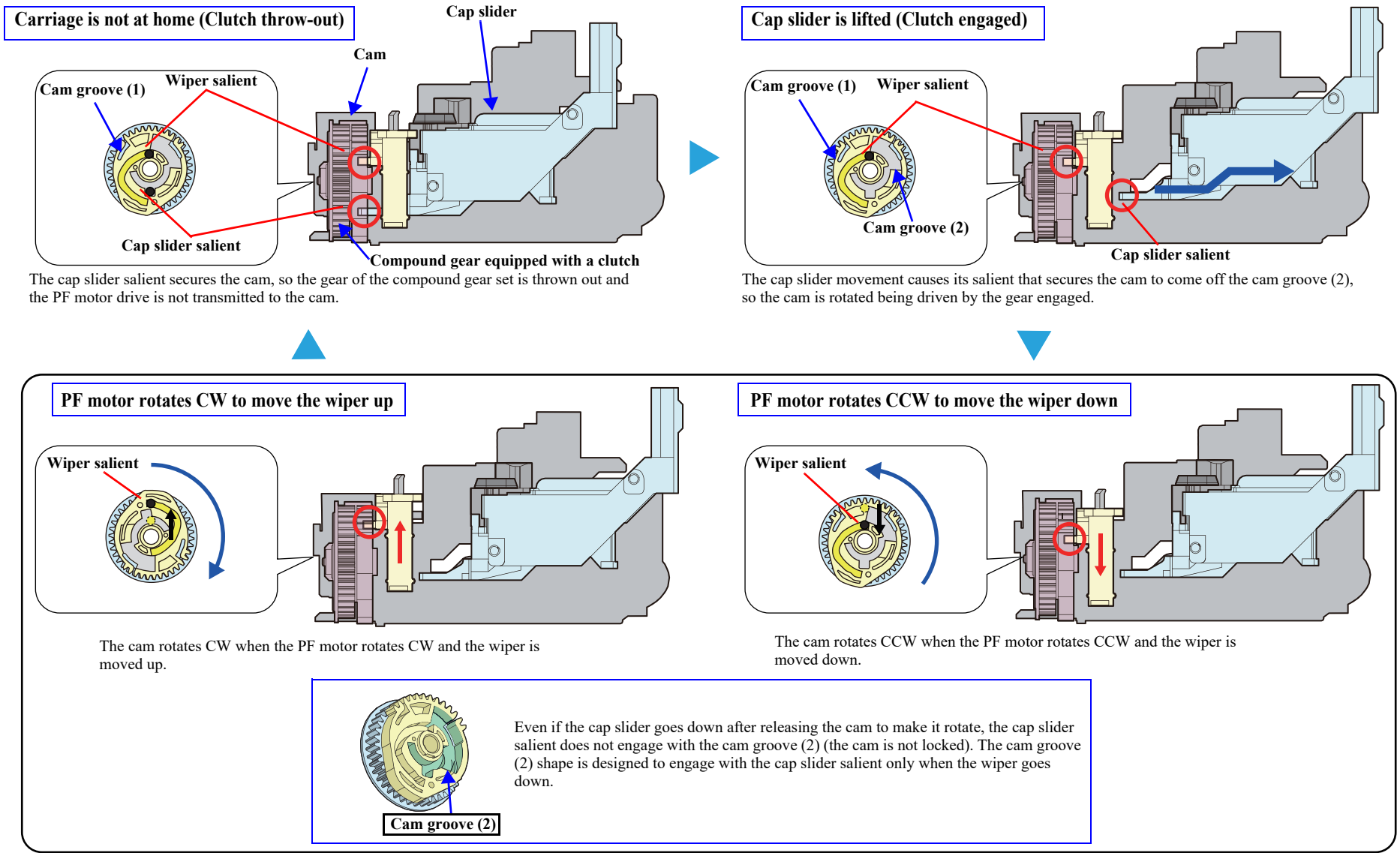

Carriage is not at home (Clutch throw-out)
Cap slider
Cam
Cam groove (1)
Wiper salient
Cap slider salient
Compound gear equipped with a clutch
The cap slider salient secures the cam, so the gear of the compound gear set is thrown out and the PF motor drive is not transmitted to the cam.
Cap slider is lifted (Clutch engaged)
Cam groove (1)
Wiper salient
Cam groove (2)
Cap slider salient
The cap slider movement causes its salient that secures the cam to come off the cam groove (2), so the cam is rotated being driven by the gear engaged.
PF motor rotates CW to move the wiper up
Wiper salient
The cam rotates CW when the PF motor rotates CW and the wiper is moved up.
PF motor rotates CCW to move the wiper down
Wiper salient
The cam rotates CCW when the PF motor rotates CCW and the wiper is moved down.
Cam groove (2)
Even if the cap slider goes down after releasing the cam to make it rotate, the cap slider salient does not engage with the cam groove (2) (the cam is not locked). The cam groove (2) shape is designed to engage with the cap slider salient only when the wiper goes down.

Figure 1-27. Wiper mechanism operation

1.4.2.2.4 CR Lock Mechanism

The CR Lock operates in synchronization with the cap unit. It locks or unlocks the CR using the PF motor drive force transmitted through the cam of the compound gear set equipped with a clutch. For information on how the cap slider and the cam are related to each other, see "1.4.2.2.3 Wiper Mechanism" (p 30).

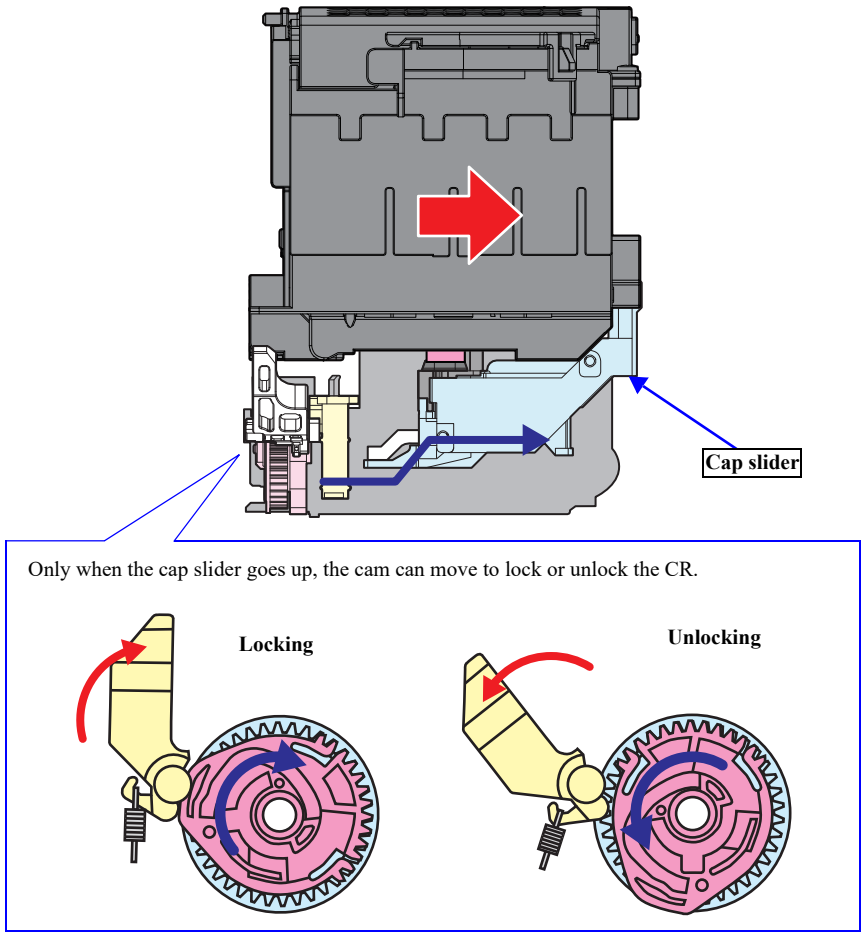


Figure 1-28. CR Lock mechanism operation

CHAPTER

2

TROUBLESHOOTING

2.1 Troubleshooting

This section describes the troubleshooting workflow and fatal error information.

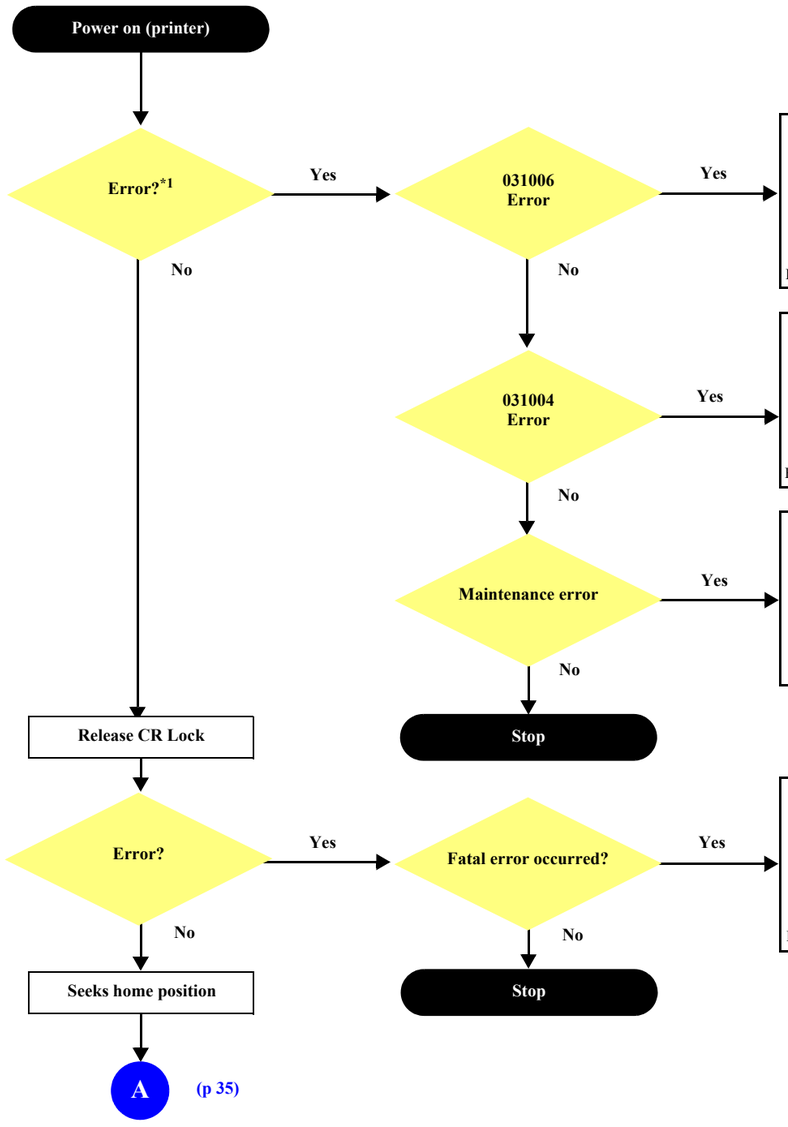
2.1.1 Troubleshooting Workflow

The following page describes the troubleshooting workflow. Follow the flow when troubleshooting problems.

- **This flowchart is compiled based on the following contents.**
  - **Our experience regarding the quality problem.**
  - **ESK's repair data.**
  - **Printer Mechanism specification for the product.**
- **If the reason for the return is evident, first check the phenomenon user claims recurs, then proceed to the troubleshooting.**
- **If the SCN error is the reason for the return, since the printer may be the cause of the error, check the Fatal Error Code history saved in the EEPROM with the adjustment program before starting the troubleshooting.**

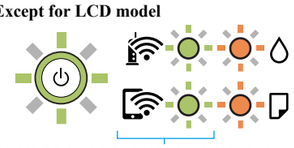
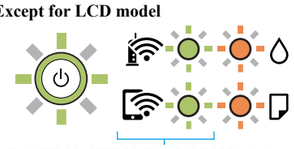
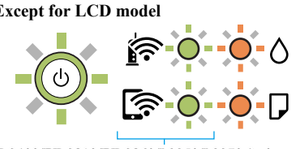
- " Workflow when the Power is ON (Printer) (p34)"
- " Workflow for Scanner Errors when the Power is ON (p37)"
- " Workflow for Errors when Printing Starts (p38)"

2.1.1.1 Workflow when the Power is ON (Printer)



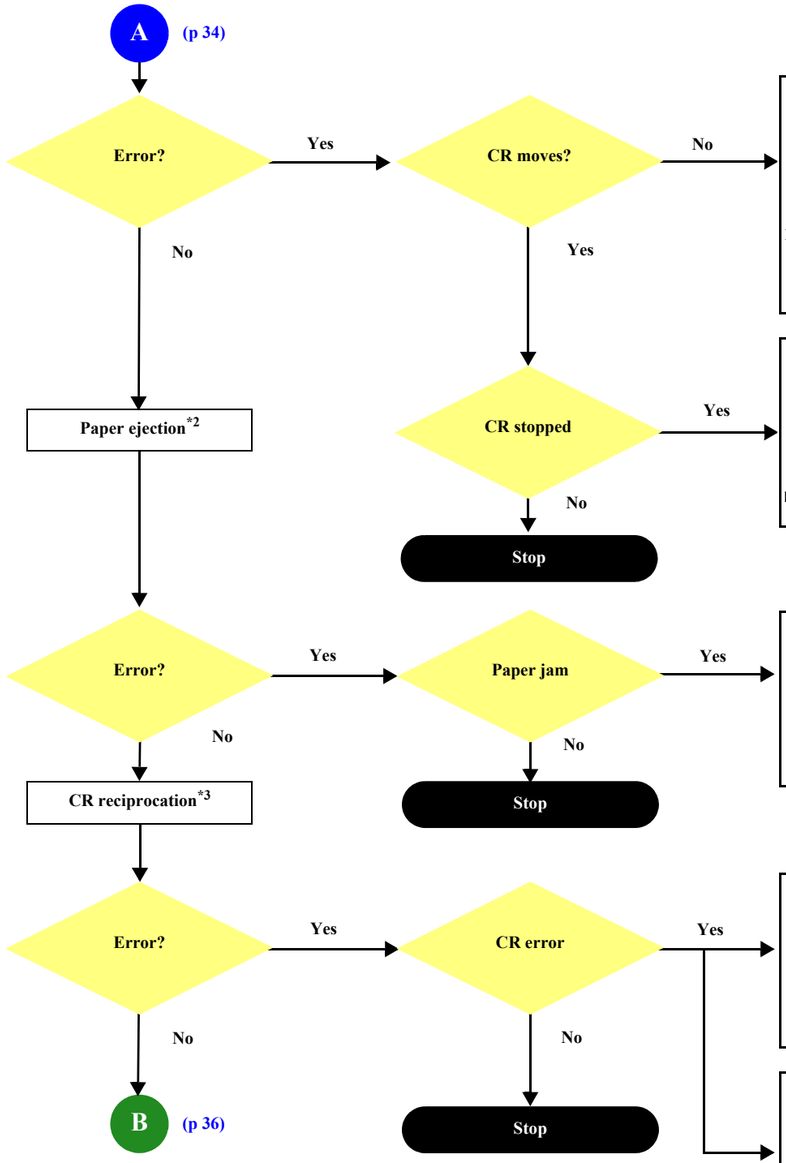
CHECK

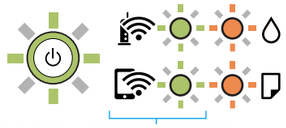
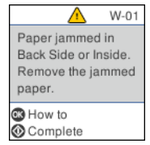
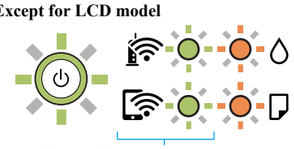
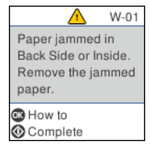
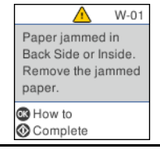
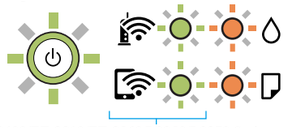
- **Fatal Errors may occur during the Mechanism operation. When an error occurred other than the timing shown below, check the Mechanism for other causes.**
- **See "2.1.1.2 Workflow for Scanner Errors when the Power is ON (p37)" since the scanner operates during the power-on sequence of the printer.**
- **For details of error indicators, see "2.1.1.4 Error Indicators on the Printer (p39)".**

Except for LCD model  ET-2400/ET-2810/ET-2860/L3250/L3270 Series only	**LCD model** 	Blowout of a fuse of the Main Board	■ Check disconnection, breakage, slant connection, or damage contact of the Head FFC. ■ Print head is broken. ■ Replace the Main Board.
Except for LCD model  ET-2400/ET-2810/ET-2860/L3250/L3270 Series only	**LCD model** 	Detects abnormality of the Head Thermistor.	■ Check disconnection, breakage, slant connection, or damage contact of the Head FFC. ■ Print head is broken. ■ Replace the Main Board.
Except for LCD model 	**LCD model** 	Main or borderless maintenance error	Replace the Porous Pad Assy or the Porous Pad PG Front, and then reset the Main or Borderless Waste Ink Pad Counter.
Except for LCD model  ET-2400/ET-2810/ET-2860/L3250/L3270 Series only	**LCD model** 	1. PF Motor did not rotate. (Error Code: 000041) 2. PF Motor rotated too fast. (Error Code: 000041) 3. PF Motor rotated. (Error Code: 000043)	1. Disconnection of the PF Motor Connector, load is too large for the paper feed mechanism. 2. Replace the PF Encoder FFC, the PF Encoder. 3. Replace the PF Motor. Common: Replace the Main Board.

Note "*1": Mechanism does not operate yet.

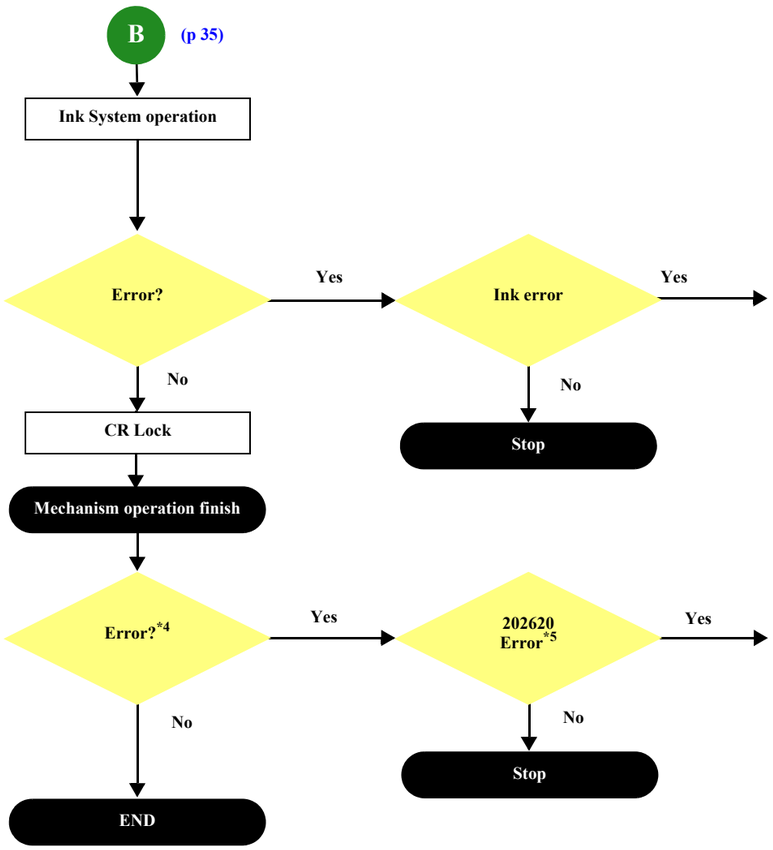
Note :Off / :On / :Flashing

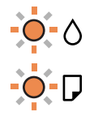
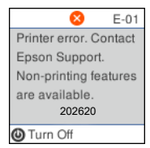


Except for LCD model  ET-2400/ET-2810/ET-2860/L3250/L3270 Series only	**LCD model** 	CR did not function.	■ Remove the tape securing the CR Unit if the error occurs when the printer is powered on for the first time. ■ Check whether the Lock CR is released. If not, the PF Motor or the Ink System Assy is broken. ■ Check the mechanical load of the CR Unit manually, and check the Ink System Assy also. ■ CR Motor disconnect, replace the cable. ■ Replace the CR Motor. ■ Replace the Main Board.
Except for LCD model  ET-2400/ET-2810/ET-2860/L3250/L3270 Series only	**LCD model** 	1. Fatal Error (Error Code: 000025) 2. Fatal Error (Error Code:000023 [Stops with noises.]) 3. Fatal Error (Error Code: 000031)	1. Check whether any obstacle exists in the CR Unit motion range. 2. Check whether any problem occurred to the Lock CR and Ink System Assy. 3. Check if the Timing Belt is loose. 4. Clean or replace the CR Scale. 5. Replace the Main Board.
Except for LCD model 	**LCD model** 	PE Sensor detected paper presence Note PF Motor rotates for a while (longer than normal), and then the error occurs.	■ Check if any obstacle exists in the Paper Path. Remove it if any. ■ Replace the Main Board.
Except for LCD model 	**LCD model** 	Paper jam error occurred.	■ Check if there is any obstacle in the CR Unit motion range. ■ Check if the CR Motor gets stuck somewhere when moved by hand. ■ Check if any heavy load exists in the CR Unit motion range. Note Perform the corresponding repair.
Except for LCD model  ET-2400/ET-2810/ET-2860/L3250/L3270 Series only	**LCD model** 	Fatal Error of CR system occurred.	■ Check if there is any obstacle in the CR Unit motion range. ■ Check if the CR Motor gets stuck somewhere when moved by hand. ■ Check if any heavy load exists in the CR Unit motion range. Note Perform the corresponding repair.

Note "*2": Performed if an abnormality occurred the last time the printer was powered off.
"*3": CR Unit reciprocates two times quickly when environmental temperature is lower than 5°C or when initial charge is not performed yet.

Note :Off / :On / :Flashing



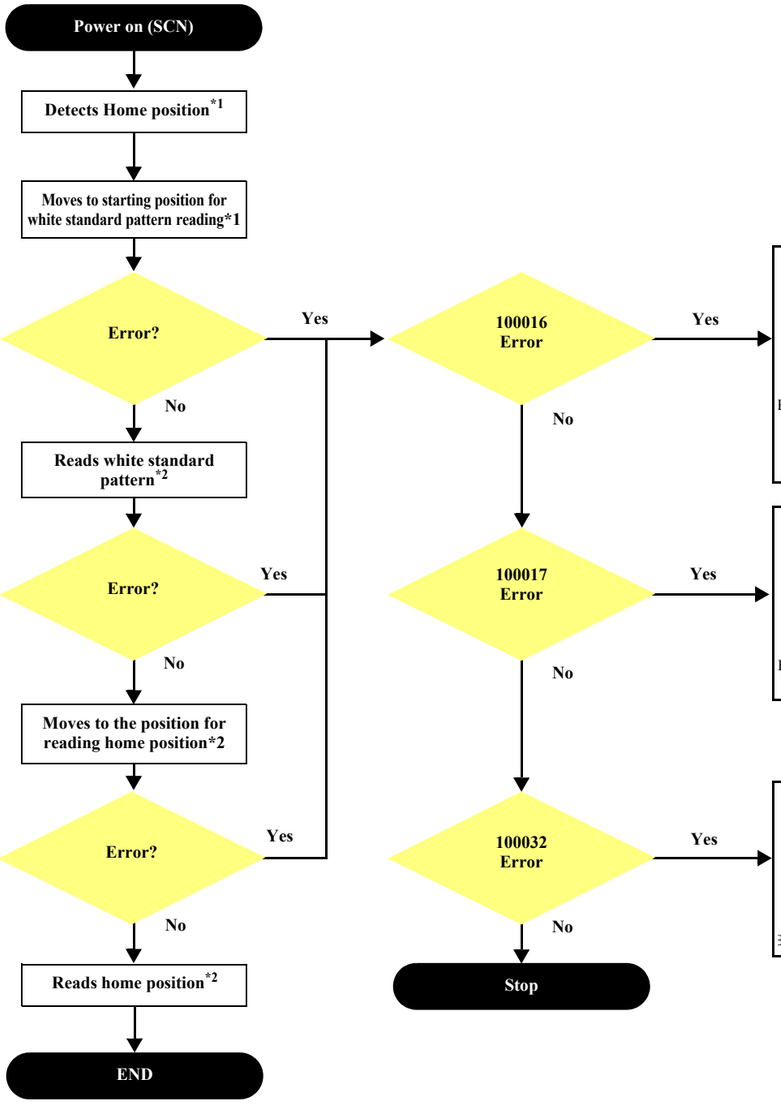
Except for LCD model	LCD model		
		Maintenance Error	Replace the Porous Pad Assy or the Porous Pad PG Front, and then reset the Main or Borderless Waste Ink Pad Counter.
		Wi-Fi Board is broken.	■ Check the connection of the Wi-Fi Board. ■ Replace the Wi-Fi Board.

Note "*4": Occurs five to six seconds after the completion of the mechanism operation.

Note "*5": ET-2400/ET-2810/ET-2860/L3250/L3270 Series only

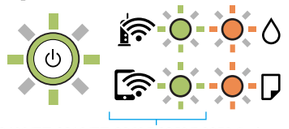
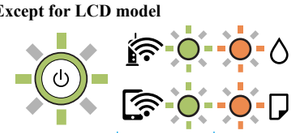
Note :Off / :On :Flashing

2.1.1.2 Workflow for Scanner Errors when the Power is ON



CHECK

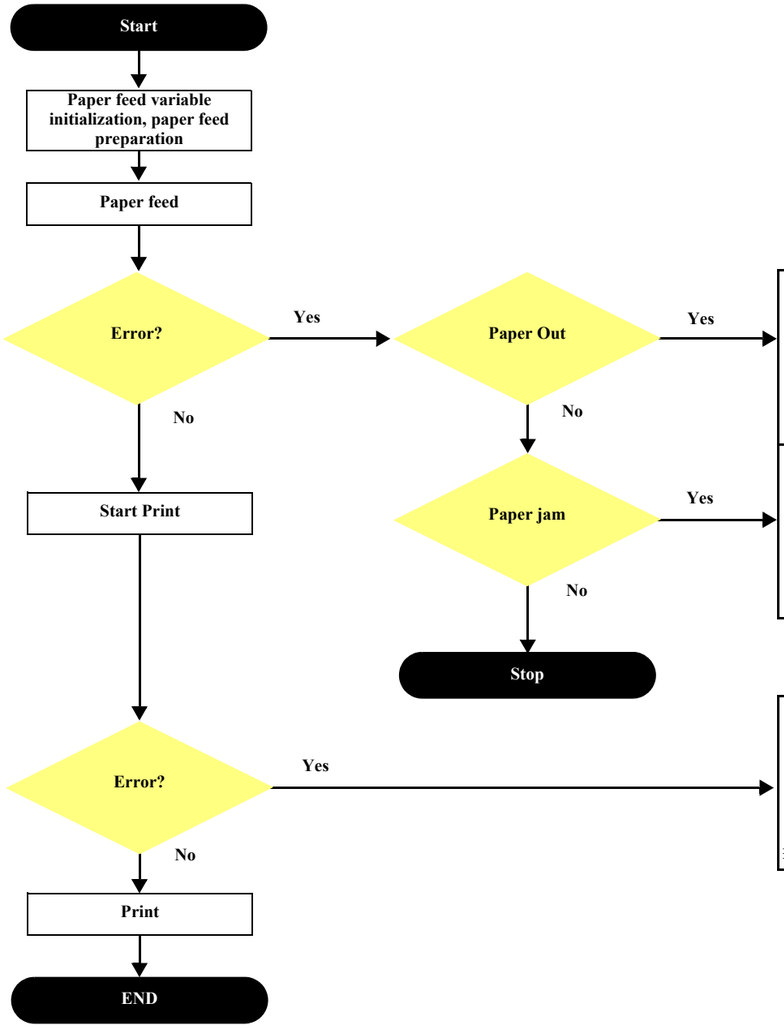
- **The scanner initial operation and the printer initialization are performed in parallel when the power is turned on.**
- **Depending on the error type, a scanner error may occur after the printer was repaired because some of the printer error indications have higher priority (and vice versa).**
- **For repair, replace the Scanner Unit.**
- **Measurement failure does not occur when turning the power on. The measurement sequence occurs when entering the power saving mode.**

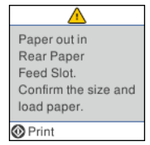
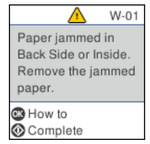
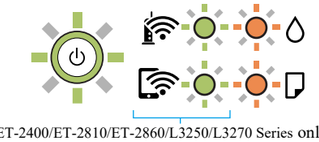
Except for LCD model	LCD model		
 ET-2400/ET-2810/ET-2860/L3250/L3270 Series only		Home position detection error ■ Scanner CR cannot move to the home position because load is too large. ■ CIS is broken (cannot read the white standard pattern and home position pattern).	1. Turn the power on with the Document Cover opened. 2. Check if the CIS moves to the left to read the white standard/ home patterns. 3. Check if the emission color of the CIS is white (not greenish, reddish, or bluish). If the light does not look like white, check the SCN FFC for damage, disconnection or skew. 4. Replace the Scanner Unit with a new one. 5. Replace the Main Board with a new one.
Except for LCD model	**LCD model**		
 ET-2400/ET-2810/ET-2860/L3250/L3270 Series only		Contact detection distance exceeded ■ Contact detection to the right side has not been completed properly. ■ Wheel Train of the Drive Mechanism is detached or broken. ■ Scanner Motor Wheel Train is detached or broken.	1. Turn the power on with the Document Cover opened. 2. Check if the Scanner CR reaches (comes in contact with) the right side. 3. Check the Wheel Train of the Drive Mechanism for damage. 4. Check the Scanner FFC for damage, disconnection or skew. 5. Replace the Scanner Unit with a new one. 6. Replace the Main Board with a new one.
Except for LCD model	**LCD model**		
ET-2400/ET-2810/ET-2860/L3250/L3270 Series only		LED light lighting failure ■ Scanner FFC disconnection, breakage, slant connection, or damaged contact (CN409). ■ CIS is broken.	1. Check the color of the LED at power-on. 2. Check the scanner FFC for damage, disconnection or skew. 3. Replace the Scanner Unit with a new one. 4. Replace the Main Board with a new one.

Note "*1": CIS does not light up.
"*2": CIS lights in greenish white.

Note :Off / :On / :Flashing

2.1.1.3 Workflow for Errors when Printing Starts



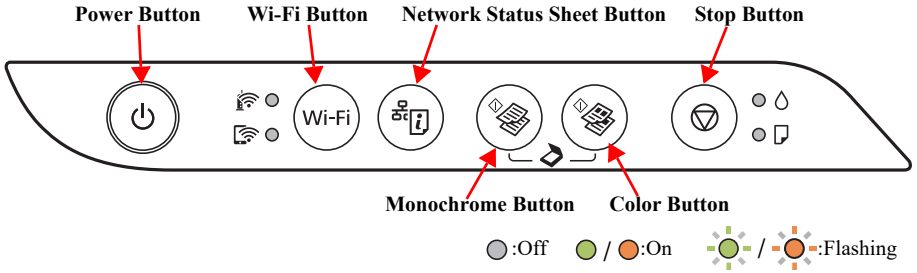
Except for LCD model 	**LCD model** 	■ Paper out in the Rear Tray ■ The leading edge cannot be detected with the PE Sensor in the range of the standard movement.	■ Refill paper to the Rear Tray and set the Guide Paper back in place fully. ■ Replace the Main Board.
Except for LCD model 	**LCD model** 	■ Paper jam occurred in the path until the Lever Detector PE Assy ■ PE Sensor error ■ CR system Fatal Error	■ Remove the foreign objects. ■ Troubleshoot and repair the CR system Fatal Error. ■ Replace the Main Board.
Except for LCD model 	**LCD model** 	■ Fatal Error: Head temperature error (031004) ■ Fatal Error: Head Hot error (before printing) (031001) ■ Fatal Error: Head Hot error (after flushing) (031002) Note Head Hot error does not occur when the signals do not flow fully because part or all of the contact of FFC is covered by foreign objects or the like.	1. Check the Head FFC state (CN301). 2. Replace the Print Head. 3. Replace the Main Board. Note Check the procedure in order.

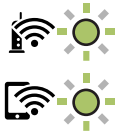
Note :Off / :On / :Flashing

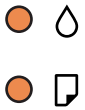
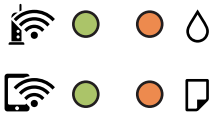
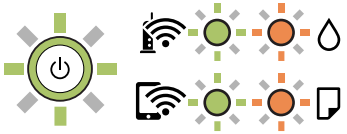
2.1.1.4 Error Indicators on the Printer

When an error occurs, the light turns on or flashes. Details of the error are displayed on the computer screen.

ET-2400/ET-2810/ET-2860/L3250/L3270 SERIES

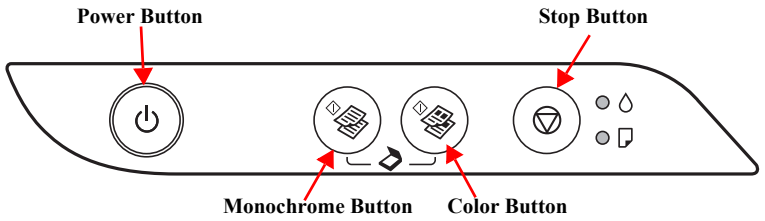


Light	Situation	Solutions
	Wi-Fi connection error has occurred.	Press the Wi-Fi button to clear the error and try again.
	Initial ink charging may not be complete.	Perform initial charge completely.
	No paper is loaded or more than one sheet has been fed at a time.	Load paper and press the Monochrome Button or the Color Button.
	A paper jam has occurred.	Remove the paper and press the Monochrome Button or the Color Button. If the paper jam error continues after removing the paper and turning the power off and on again, paper may remain inside the printer. Load A4 size paper in the rear paper feed, and then press the Monochrome Button or the Color Button to remove the paper inside. Load paper in the portrait direction.

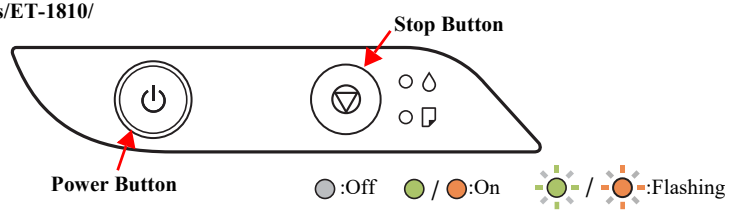
Light	Situation	Solutions
	• The printer was not turned off correctly*. • Because the printer was turned off while operating, the nozzles may have dried and clogged. * The power was turned off with a power strip or breaker, the plug was pulled out of the outlet, or an electrical failure occurred.	After clearing the error by pressing the Monochrome Button or the Color Button, perform a nozzle check and cancel any pending print jobs.
	• When the LEDs flash simultaneously, An ink pad is nearing or at the end of its service life.	Replace the Porous Pad Assy, and then reset the Main Waste Ink Pad Counter.
	• When the LEDs flash alternately, A borderless printing ink pad is nearing or at the end of its service life.	Replace the Porous Pad PG Front, and then reset the Borderless Waste Ink Pad Counter.
	The printer has started in recovery mode because the firmware update failed.	Update the firmware with USB connection. During recovery mode, you cannot update the firmware over a network connection.
	A printer error has occurred.	Open the front cover and remove any paper inside the printer. Turn the power off and on again. See " 2.3.2 Fatal Error Code (p42)".

L3210/L3230 SERIES, L3200 SERIES, L1210/L1230 SERIESET-1810/ L1250/L1270 SERIES

L3210/L3230 Series, L3200



L1210/L1230 Series/ET-1810/



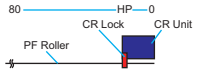
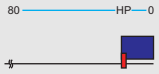
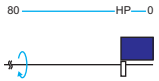
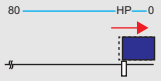
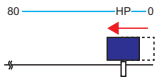
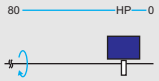
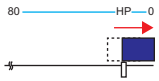
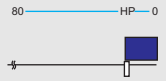
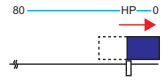
Light	Situation	Solutions
	Initial ink charging may not be complete.	Perform initial charge completely.
	No paper is loaded or more than one sheet has been fed at a time.	Load paper and press the Monochrome Button or the Color Button.
	A paper jam has occurred.	Remove the paper and press the Monochrome Button or the Color Button. If the paper jam error continues after removing the paper and turning the power off and on again, paper may remain inside the printer. Load A4 size paper in the rear paper feed, and then press the Monochrome Button or the Color Button to remove the paper inside. Load paper in the portrait direction.
	• The printer was not turned off correctly*. • Because the printer was turned off while operating, the nozzles may have dried and clogged. * The power was turned off with a power strip or breaker, the plug was pulled out of the outlet, or an electrical failure occurred.	After clearing the error by pressing the Monochrome Button or the Color Button, perform a nozzle check and cancel any pending print jobs.
	• When the LEDs flash simultaneously, An ink pad is nearing or at the end of its service life.	Replace the Porous Pad Assy, and then reset the Main Waste Ink Pad Counter.
	• When the LEDs flash alternately, A borderless printing ink pad is nearing or at the end of its service life.	Replace the Porous Pad PG Front, and then reset the Borderless Waste Ink Pad Counter.
	A printer error has occurred.	Open the front cover and remove any paper inside the printer. Turn the power off and on again. See " 2.3.2 Fatal Error Code (p42)".

2.2 Power-On Sequence

This section describes the power-on sequences as reference for troubleshooting. The preconditions are as follows.

- ☐ Condition: Power-on sequence (See Table2-1)
  - ■ No error occurred when you turned on the printer last time and it has been correctly turned off.
  - ■ Initial ink charge was done and every tank has sufficient ink.
  - ■ No paper on the paper path.
  - ■ The Print Head is capped.
  - ■ The Carriage is normally fixed by the Lock CR.
  - ■ Maintenance error recovery has never been performed.

Table 2-1. Normal Power-on Sequence

Operation*1	CR Unit/PF Roller movement and position*2
1. Checking fuse on the Print Head 1-1.Checks if the fuse on the Print Head circuit boards is blown.*3	
2. Checking for waste ink overflow 2-1.Checks the waste ink counter if the waste ink overflow is occurring.	
3. Releasing the Lock CR 3-1.The PF Motor rotates counterclockwise and releases the Lock CR.	
4. Seeking the home position 4-1.The CR Unit moves to the 0-digit side slowly and confirms it touches the Right Frame.	
4-2.The CR Unit moves to the 80-digit side slowly and confirms it does not touch the foreign material, such as remaining paper.	
4-3.The PF Motor rotates clockwise to completely release the Lock CR.	
4-4.The CR Unit moves to the 0-digit side slowly and checks it touches the Right Frame.	
4-5.The distance from the position where the CR Unit touched to the Left Frame is regarded as the standard distance from the origin position, and the home position is fixed. From then on, the CR Unit position is monitored according to the signals from the CR Encoder.	
5. Ink system performance while power on 5-1.The CR Unit goes back to the home position.	

Note *1: The rotation directions of the PF Motor are as follows.
Clockwise: Paper is fed normally
Counterclockwise: Paper is fed backward

*2: The conditions of the Lock CR are as follows.
Red: Lock CR is set
White: Lock CR is released

*3: The fatal error occurs if there is a problem such as the fuse blew.

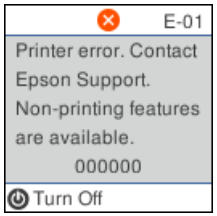
2.3 Fatal Error Code List

This section describes how to check the fatal error code, description, and the possible causes.

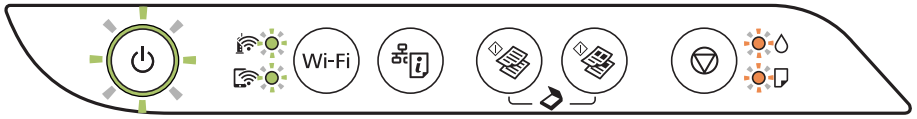
2.3.1 Displaying the Fatal Error Code

The fatal error code is stored in the EEPROM on the Main Board and can be read out using the Adjustment Program. When a fatal error occurs, the LEDs on the panel flash as shown below.

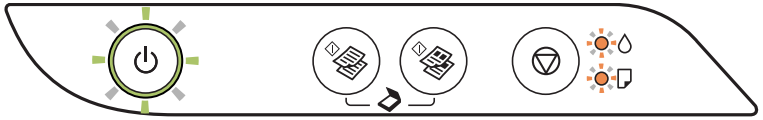
ET-4800/L5290/L5310 Series/ET-2800/ET-



ET-2400/ET-2810/ET-



L3210/L3230 Series/L3200 Series



L1210/L1230 Series/ET-1810/L1250/L1270

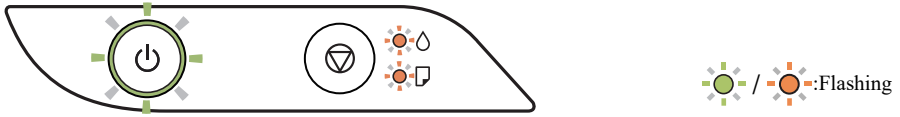


Figure 2-1. Indication of the fatal error

2.3.2 Fatal Error Code

This section describes the fatal error code and the possible cause for this product.

- ☐ " ADF/ Scanner (Except for L1210/L1230 Series/ET-1810/L1250/L1270 Series) (p43)"
- ☐ " Printer (CR) (p52)"
- ☐ " Printer (PF) (p56)"
- ☐ " Printer (PE Sensor) (p59)"
- ☐ " Printer (Power) (p60)"
- ☐ " Printer (Head/CSIC) (p61)"
- ☐ " Printer (Others) (p63)"
- ☐ " System Error (p64)"

CHECK

ADF related errors are included in the scanner fatal error list.

2.3.2.1 ADF/ Scanner (Except for L1210/L1230 Series/ET-1810/ L1250/L1270 Series)

Error code	Error name	Possible cause	Confirmation procedure	Connector No.			
				ET-4800/ L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/ L3260/L3280 Series	ET-2400/ET-2810/ET-2860/L3250/ L3270 Series	L3210/L3230 Series/ L3200 Series	L1210/L1230 Series/ ET-1810/ L1250/ L1270 Series
100001	ADF PID excess speed error	■ Failed to read the Scanner Encoder 1. Contamination of the Scanner Encoder Scale 2. Damage or skew of the Scanner Encoder FFC 3. Failure of the Scanner Encoder Sensor ■ Failure of the Scanner Motor Driver 4. Failure of the Main Board	1. Clean the Scanner Encoder Scale if it is contaminated. 2. Check the cable/FFC of the Scanner Motor/Encoder. 3. Replace the Scanner Unit with a new one. 4. Replace the Main Board with a new one.	CN706		CN8	---
100002	ADF PID reverse error	■ Paper feed fails, stopped by obstacles 1. Paper feed was stopped by; • Obstacles such as jammed paper • Overload of the paper feed mechanism • Disengaging or tooth breakage of wheel train of the paper feed mechanism ■ Failed to read the Scanner Encoder 2. Jumping of the Scanner Motor Gears 3. Contamination of the Scanner Encoder Scale 4. Damage or skew of the Scanner Encoder FFC 5. Failure of the Scanner Encoder Sensor 6. Failure of the Main Board	1. Check that no pieces of paper or foreign objects exist in the paper path. 2. Check the load of the ADF paper feed mechanism. 3. Check the ADF/Scanner Drive Gear Wheel Train. 4. Clean the Scanner Encoder Scale if it is contaminated. 5. Check the cable/FFC of the Scanner Motor/Encoder. 6. Replace the Scanner Unit with a new one. 7. Replace the Main Board with a new one.	CN706		CN8	---
100003	ADF PID lock error	■ The scanner motor did not run or obstacles exist in the paper path 1. Overload of the paper feed mechanism 2. Disengaging or breakage of the gears ■ Failed to read the Scanner Encoder 3. Contamination of the Scanner Encoder Scale 4. Disconnection, break, skew or damage of the Scanner Encoder FFC 5. Failure of the Scanner Encoder Sensor 6. Failure of the Scanner Motor (the lead wire is broken or the connector is disconnected) 7. Failure of the Main Board	1. Check that no jammed paper exist in the paper path. 2. Check the load of the ADF. 3. Check the ADF/Scanner Drive Gear Wheel Train. 4. Clean the Scanner Encoder Scale if it is contaminated. 5. Check the cable/FFC of the Scanner Motor/Encoder. 6. Replace the Scanner Encoder Sensor with a new one. 7. Check the connector of the Scanner Motor. 8. Replace the Scanner Unit with a new one. 9. Replace the Main Board with a new one.	CN706		CN8	---

Error code	Error name	Possible cause	Confirmation procedure	Connector No.			
				ET-4800/ L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/ L3260/L3280 Series	ET-2400/ET-2810/ET-2860/L3250/ L3270 Series	L3210/L3230 Series/ L3200 Series	L1210/L1230 Series/ ET-1810/ L1250/ L1270 Series
100005	ADF PID excess load error	■ The Scanner Motor stopped running in the middle of the operation 1. The ADF was stopped by; • Obstacles such as jammed paper • Overload of the paper feed mechanism • Disengaging or breakage of the gears ■ Failed to read the Scanner Encoder 2. Jumping of the Scanner Motor Gears 3. Contamination of the Scanner Encoder Scale 4. Disconnection, break, skew or damage of the Scanner Motor Cable/Encoder FFC 5. Failure of the Scanner Motor (not completely broken) 6. Failure of the Main Board	1. Check that no pieces of paper or foreign objects exist in the paper path. 2. Check the load of the ADF paper feed mechanism. 3. Check the ADF/Scanner Drive Gear Wheel Train. 4. Check the Scanner Encoder Scale for damage or contamination. 5. Check the cable/FFC of the Scanner Motor/Encoder. 6. Replace the Scanner Unit with a new one. 7. Replace the Main Board with a new one.	CN706		CN8	---
100006	ADF PID driving time error	Malfunction or crash of the firmware	1. Turn the printer off and back it on. 2. If the error still occurs after the restart, replace the Main Board.	---	---	---	---
100009	ADF BS+ excess speed error	■ Failed to read the Scanner Encoder 1. Contamination of the Scanner Encoder Scale 2. Damage or skew of the Scanner Encoder FFC 3. Failure of the Scanner Encoder Sensor ■ Failure of the scanner motor driver 4. Failure of the Main Board	1. Clean the Scanner Encoder Scale if it is contaminated. 2. Check the cable/FFC of the Scanner Motor/Encoder. 3. Replace the Scanner Unit with a new one. 4. Replace the Main Board with a new one.	CN706		CN8	---

Error code	Error name	Possible cause	Confirmation procedure	Connector No.			
				ET-4800/ L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/ L3260/L3280 Series	ET-2400/ET-2810/ET-2860/L3250/ L3270 Series	L3210/L3230 Series/ L3200 Series	L1210/L1230 Series/ ET-1810/ L1250/ L1270 Series
100010	ADF BS+ reverse error	■ Paper feed fails, stopped by obstacles 1. Paper feed was stopped by; • Obstacles such as jammed paper • Overload of the paper feed mechanism • Disengaging or tooth breakage of wheel train of the paper feed mechanism ■ Failed to read the Scanner Encoder 2. Jumping of the Scanner Motor Gears 3. Contamination of the Scanner Encoder Scale 4. Damage or skew of the Scanner Encoder FFC 5. Failure of the Scanner Encoder Sensor 6. Failure of the Main Board	1. Check that no pieces of paper or foreign objects exist in the paper path. 2. Check the load of the ADF paper feed mechanism. 3. Check the ADF/Scanner Drive Gear Wheel Train. 4. Clean the Scanner Encoder Scale if it is contaminated. 5. Check the cable/FFC of the Scanner Motor/Encoder. 6. Replace the Scanner Unit with a new one. 7. Replace the Main Board with a new one.	CN706		CN8	---
100011	ADF BS+ lock error	■ The Scanner Motor did not run 1. The ADF was stopped by; • Obstacles such as jammed paper • Overload of the mechanism • Disengaging or breakage of the gears ■ Failed to read the Scanner Encoder 2. Contamination of the Scanner Encoder Scale 3. Disconnection, break, skew or damage of the Scanner Motor Cable/Encoder FFC 4. Failure of the Scanner Encoder Sensor 5. Failure of the Scanner Motor (the lead wire is broken or the connector is disconnected) 6. Failure of the Main Board	1. Check that no pieces of paper or foreign objects exist in the paper path. 2. Check the ADF/Scanner Drive Gear Wheel Train. 3. Clean the Scanner Encoder Scale if it is contaminated. 4. Check the cable/FFC of the Scanner Motor/Encoder. 5. Replace the ADF unit with a new one. 6. Replace the Scanner Unit with a new one. 7. Replace the Main Board with a new one.	CN706		CN8	---

Error code	Error name	Possible cause	Confirmation procedure	Connector No.			
				ET-4800/ L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/ L3260/L3280 Series	ET-2400/ET-2810/ET-2860/L3250/ L3270 Series	L3210/L3230 Series/ L3200 Series	L1210/L1230 Series/ ET-1810/ L1250/ L1270 Series
100013	ADF BS+ excess load error	■ The Scanner Motor stopped running in the middle of the operation 1. The ADF was stopped by; • Obstacles such as jammed paper • Overload of the paper feed mechanism • Disengaging or tooth breakage of wheel train of the Scanner Gears ■ Failed to read the ADF motor encoder 2. Jumping of the Scanner Motor Gears 3. Contamination of the ADF encoder scale 4. Failure of the Scanner Motor (not completely broken) 5. Failure of the Main Board	1. Check that no pieces of paper or foreign objects exist in the paper path. 2. Check the load of the ADF paper feed mechanism. 3. Check the ADF/Scanner Drive Gear Wheel Train. 4. Clean the Scanner Encoder Scale if it is contaminated. 5. Replace the ADF unit with a new one. 6. Replace the Scanner Unit with a new one. 7. Replace the Main Board with a new one.	CN706		CN8	---
100014	ADF BS+ driving time error	Malfunction or crash of the firmware	1. Turn the printer off and back it on. 2. If the error still occurs after the restart, replace the Main Board.	---	---	---	---
100016	HP detection failure	■ The Scanner CR could not return to its home. 1. Damage or disengaging of wheel train of the drive mechanism 2. Disengaging, fraying, jumping of the timing belt ■ Failed to read the white standard/home patterns. 3. Disconnection, break, skew or damage of the scanner FFC 4. Failure of the CIS Unit 5. Failure of the Scanner Housing 6. Failure of the Main Board	1. With the ADF Unit or the Document Cover opened, turn the power on. 2. Check if the CIS moves to the right to read the white standard/home patterns. 3. Check if the emission color of the CIS is white (not greenish, reddish, or bluish). If the light does not look like white, check the Scanner FFC for damage, disconnection or skew. 4. Replace the Scanner Unit with a new one. 5. Replace the Main Board with a new one.	CN706 CN409		CN8 CN11	---

Error code	Error name	Possible cause	Confirmation procedure	Connector No.			
				ET-4800/ L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/ L3260/L3280 Series	ET-2400/ET-2810/ET-2860/L3250/ L3270 Series	L3210/L3230 Series/ L3200 Series	L1210/L1230 Series/ ET-1810/ L1250/ L1270 Series
100017	Contact detection distance exceeded	■ The Scanner CR cannot completely reach the home (right side). 1. Damage or disengaging of Wheel Train of the Drive Mechanism ■ Failure to read the Scanner Encoder 2. Damage or skew of the Scanner FFC 3. Failure of the CIS Unit 4. Failure of the Scanner Housing 5. Failure of the Main Board	1. Turn the power on with the ADF Unit or the Document Cover opened. 2. Check if the CIS (Scanner CR) reaches (comes in contact with) the right side. 3. Check the Wheel Train of the Drive Mechanism for damage. 4. Check the Scanner FFC for damage, disconnection or skew. 5. Replace the Scanner Unit with a new one. 6. Replace the Main Board with a new one.	CN706 CN409		CN8 CN11	---
100018	Opposite side contact detection distance exceeded error	■ The Scanner CR cannot completely reach the opposite side of the home (right side) 1. Damage or disengaging of wheel train of the drive mechanism ■ Failed to read the Scanner Encoder 2. Damage or skew of the Scanner FFC 3. Failure of the CIS Unit 4. Failure of the Scanner Housing 5. Failure of the Main Board	1. With the document cover opened, turn the power on. 2. Check if the CIS (CR) reaches (comes in contact with) the right side. 3. Check the wheel train of the drive mechanism for damage. 4. Check the Scanner FFC for damage, disconnection or skew. 5. Replace the Scanner Unit with a new one. 6. Replace the Main Board with a new one.	CN706 CN409		CN8 CN11	---
100019	Wrong contact detection distance error	1. CIS Unit failure 2. Scanner Housing failure (Including wrong attachment of the origin mark) 3. Main Board failure 4. Scanner FFC failure/Scanner FFC connection failure 5. Scanner Motor failure/Scanner Motor connection failure	1. Check the connector of Scanner Motor. 2. Check the cable/FFC of the Scanner Motor. 3. Replace the Scanner Unit with a new one. 4. Replace the Main Board with a new one.	CN706 CN409		CN8 CN11	---
100020	Measurement error	■ Overload of the Scanner Drive Mechanism ■ Failure of the Scanner Motor	1. Check if the CIS (Scanner CR) moves or not. ☐ Check the Wheel Train of the Drive Mechanism for damage. 2. Replace the Scanner Unit with a new one. 3. Replace the Main Board with a new one.	---	---	---	---

Error code	Error name	Possible cause	Confirmation procedure	Connector No.			
				ET-4800/ L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/ L3260/L3280 Series	ET-2400/ET-2810/ET-2860/L3250/ L3270 Series	L3210/L3230 Series/ L3200 Series	L1210/L1230 Series/ ET-1810/ L1250/ L1270 Series
100032	LED light failure	■ Failure of the CIS LED light (RGB) 1. Disconnection, break, skew or damage of the Scanner FFC 2. Failure of the Scanner CIS Unit 3. Failure of the Main Board	1. Check the color of the LED at power-on. 2. Check the Scanner FFC for damage, disconnection or skew. 3. Replace the Scanner Unit with a new one. 4. Replace the Main Board with a new one.	CN409		CN11	---
100054	Paper jam error	■ No jammed paper is remaining but the sensor does not turn off 1. Failure of the ADF PE sensor 2. Failure of the cable ■ Jammed paper is remaining ■ The paper feed rollers and paper conveying rollers slip too much • At power-on, during paper feed, during scanning	1. Open the PGU LD ADF Assy and check if paper exist or not. 2. Open the ADF Document Support Cover and check if paper exist or not. 3. Open the ADF and check if paper exist or not. 4. Check if the paper sensor lever moves up and down. 5. Replace the ADF unit with a new one. 6. Replace the Scanner Unit with a new one. 7. Replace the Main Board with a new one.	CN411 CN706	CN706	CN8	---
100065	FB PID excess speed error	■ Failed to read the Scanner Encoder 1. Contamination of the Scanner Encoder Scale 2. Damage or skew of the Scanner FFC 3. Failure of the Scanner Encoder Sensor ■ Failure of the Scanner Motor Driver 4. Failure of the Main Board	1. Check the Scanner FFC for damage, disconnection or skew. 2. Replace the Scanner Unit with a new one. 3. Replace the Main Board with a new one.	CN706 CN409		CN8 CN11	---
100066	FB PID reverse error	■ Operation failure of the Scanner Motor 1. The scanning operation was stopped by; • Disengaging of the Scanner CR • Disengaging of the Scanner Motor Pulley or cracking of the Scanner Motor Gears ■ Failure of Scanner Encoder reading 2. Contamination of the Scanner Encoder 3. Damage or skew of the Scanner FFC 4. Failure of the Scanner Encoder Sensor 5. Failure of the Main Board	1. Check the Scanner FFC for damage, disconnection or skew. 2. Replace the Scanner Unit with a new one. 3. Replace the Main Board with a new one.	CN706 CN409		CN8 CN11	---

Error code	Error name	Possible cause	Confirmation procedure	Connector No.			
				ET-4800/ L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/ L3260/L3280 Series	ET-2400/ET-2810/ET-2860/L3250/ L3270 Series	L3210/L3230 Series/ L3200 Series	L1210/L1230 Series/ ET-1810/ L1250/ L1270 Series
100067	FB PID lock error	■ The Scanner Motor did not run 1. The scanning operation was stopped by; • Disengaging of the Scanner CR • Disengaging of the Scanner Motor Pulley or cracking of the Scanner Motor Gears ■ Failure of Scanner Encoder reading 2. Contamination of the Scanner Encoder 3. Damage or skew of the Scanner FFC 4. Failure of the Scanner Encoder Sensor 5. Failure of the Scanner Motor (the lead wire is broken or the connector is disconnected) 6. Failure of the Main Board	1. Check the Scanner FFC for damage, disconnection or skew. 2. Replace the Scanner Unit with a new one. 3. Replace the Main Board with a new one.	CN706 CN409		CN8 CN11	---
100068	FB PID acceleration lock error	■ The scanner motor did not run 1. The scanning operation was stopped by; • Disengaging of the Scanner CR • Disengaging of the Scanner Motor Pulley or cracking of the Scanner Motor Gears ■ Failure of Scanner Encoder reading 2. Contamination of the Scanner Encoder 3. Damage or skew of the Scanner FFC 4. Failure of the Scanner Encoder Sensor 5. Failure of the Scanner Motor 6. Failure of the Main Board	1. Check the Scanner FFC for damage, disconnection or skew. 2. Replace the Scanner Unit with a new one. 3. Replace the Main Board with a new one.	CN706 CN409		CN8 CN11	---

Error code	Error name	Possible cause	Confirmation procedure	Connector No.			
				ET-4800/ L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/ L3260/L3280 Series	ET-2400/ET-2810/ET-2860/L3250/ L3270 Series	L3210/L3230 Series/ L3200 Series	L1210/L1230 Series/ ET-1810/ L1250/ L1270 Series
100069	FB PID excess load error	■ The Scanner Motor stopped running in the middle of the operation 1. The scanning operation was stopped by; • Disengaging of the Scanner CR • Disengaging of the Scanner Motor Pulley or cracking of the Scanner Motor Gears ■ Failure of Scanner Encoder reading 2. Contamination of the Scanner Encoder 3. Disconnection, break, skew or damage of the Scanner FFC 4. Failure of the Scanner Encoder Sensor 5. Failure of the Scanner Motor (not completely broken). 6. Failure of the Main Board	1. Check the Scanner FFC for damage, disconnection or skew. 2. Replace the Scanner Unit with a new one. 3. Replace the Main Board with a new one.	CN706 CN409		CN8 CN11	---
100070	FB PID driving time error	Malfunction or crash of the firmware	1. Turn the printer off and back it on. 2. If the error still occurs after the restart, replace the Main Board.	---	---	---	---
100073	FB BS+ excess speed error	■ Failure of Scanner Encoder reading 1. Contamination of the Scanner Encoder Scale 2. Damage or skew of the Scanner FFC 3. Failure of the Scanner Encoder Sensor ■ Failure of the Scanner Motor Driver 4. Failure of the Main Board	1. Check the Scanner FFC for damage, disconnection or skew. 2. Replace the Scanner Unit with a new one. 3. Replace the Main Board with a new one.	CN706 CN409		CN8 CN11	---
100074	FB BS+ reverse error	■ Operation failure of the Scanner Motor 1. The scanning operation was stopped by; • Disengaging of the Scanner CR • Disengaging of the Scanner Motor Pulley or cracking of the Scanner Motor Gears ■ Failure of Scanner Encoder reading 2. Contamination of the Scanner Encoder 3. Damage or skew of the Scanner FFC 4. Failure of the Scanner Encoder Sensor 5. Failure of the Main Board	1. Check the Scanner FFC for damage, disconnection or skew. 2. Replace the Scanner Unit with a new one. 3. Replace the Main Board with a new one.	CN706 CN409		CN8 CN11	---

Error code	Error name	Possible cause	Confirmation procedure	Connector No.			
				ET-4800/ L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/ L3260/L3280 Series	ET-2400/ET-2810/ET-2860/L3250/ L3270 Series	L3210/L3230 Series/ L3200 Series	L1210/L1230 Series/ ET-1810/ L1250/ L1270 Series
100075	FB BS+ lock error	■ The Scanner Motor did not run 1. The scanning operation was stopped by; • Disengaging of the Scanner CR • Disengaging of the Scanner Motor Pulley or cracking of the Scanner Motor Gears ■ Failure of Scanner Encoder reading 2. Contamination of the Scanner Encoder 3. Damage or skew of the Scanner FFC 4. Failure of the Scanner Encoder Sensor 5. Failure of the Scanner Motor 6. Failure of the Main Board	1. Check the Scanner FFC for damage, disconnection or skew. 2. Replace the Scanner Unit with a new one. 3. Replace the Main Board with a new one.	CN706 CN409		CN8 CN11	---
100077	FB BS+ excess load error	■ The Scanner Motor stopped running in the middle of the operation 1. The scanning operation was stopped by; • Disengaging of the Scanner CR • Disengaging of the Scanner Motor Pulley or cracking of the Scanner Motor Gears ■ Failure of Scanner Encoder reading 2. Contamination of the Scanner Encoder 3. Failure of the Scanner Motor (not completely broken). 4. Failure of the Main Board	1. Check the Scanner FFC for damage, disconnection or skew. 2. Replace the Scanner Unit with a new one. 3. Replace the Main Board with a new one.	CN706 CN409		CN8 CN11	---
100078	FB BS+ driving time error	Malfunction or crash of the firmware	1. Turn the printer off and back it on. 2. If the error still occurs after the restart, replace the Main Board.	---	---	---	---

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2.3.2.2 Printer (CR)

Error code	Error name	Possible cause	Confirmation procedure	Connector No.	
				ET-4800/ L5290/L5310 Series/ET-2800/ET-2820/ ET-2870/ET-2870U/L3260/ L3280 Series/ ET-2400/ET-2810/ET-2860/ L3250/L3270 Series	L3210/L3230 Series/L3200 Series/L1210/ L1230 Series/ ET-1810/ L1250/L1270 Series
000020	CR PID driving time error	Malfunction or crash of the firmware	1. Turn the printer off and back it on. 2. If the error still occurs after the restart, replace the Main Board.	---	---
000021	CR PID excess load error	■ The CR Motor stopped running in the middle of the operation 1. The CR was stopped by; • Obstacles such as jammed paper • Overload of the mechanism • Interfere with the Ink System Assy • Disengaging, fraying, jumping of the timing belt • Crack or disengaging of the gear, or the APG lever interferes with the CR ■ Failed to read the CR Encoder 2. Contamination of the CR Encoder Scale 3. Failure of the CR Motor (not completely broken) 4. Failure of the Main Board	1. Check that no obstacle exist in the CR Motion Range. 2. Check the CR Lock and Ink System Assy for any abnormality. 3. Check the timing belt for fraying or looseness. 4. Check the load applied to the CR Unit by moving it by hand. 5. Check if the lubricant on the CR Shaft is adequate. 6. Check the CR drive mechanism. 7. Clean the CR Encoder Scale if it is contaminated. 8. Replace the CR Motor with a new one. 9. Replace the Main Board with a new one.	---	---
000022	CR PID excess speed error	■ Failed to read the CR Encoder 1. Contamination of the CR Encoder Scale 2. Damage or skew of the CR Encoder FFC 3. Failure of the CR Encoder Sensor ■ Failure of the CR Motor Driver 4. Failure of the Main Board	1. Clean the CR Encoder Scale if it is contaminated. 2. Check the FFC of the CR Encoder. 3. Replace the CR Encoder Sensor with a new one. 4. Replace the Main Board with a new one.	CN319 CN305	CN61 CN12

Error code	Error name	Possible cause	Confirmation procedure	Connector No.	
				ET-4800/ L5290/L5310 Series/ET-2800/ET-2820/ ET-2870/ET-2870U/L3260/ L3280 Series/ ET-2400/ET-2810/ET-2860/ L3250/L3270 Series	L3210/L3230 Series/L3200 Series/L1210/ L1230 Series/ ET-1810/ L1250/L1270 Series
000023	CR PID reverse error	■ Operation failure of the CR Motor Assy, stopped by obstacles 1. CR was stopped by; • Obstacles such as jammed paper • Interfere with the ink system • Disengaging or breakage of the gears ■ Failed to read the CR Encoder 2. Jumping of the CR timing belt 3. Contamination of the CR Encoder Scale 4. Damage or skew of the CR Encoder FFC 5. Failure of the CR Encoder Sensor 6. Failure of the Main Board	1. Check that no obstacle exist in the CR Motion Range. 2. Check the CR Lock and Ink System Assy for any abnormality. 3. Check the timing belt for fraying or looseness. 4. Clean the CR Encoder Scale if it is contaminated. 5. Check the CR Encoder FFC or the connector. 6. Replace the CR Encoder Sensor with a new one. 7. Replace the Main Board with a new one.	CN319 CN305	CN61 CN12
000024	CR PID lock error	■ The CR Motor did not run, or the CR Unit could not move smoothly 1. Overload of the CR Unit ■ Failed to read the CR Encoder 2. The timing belt become frayed or jumping 3. Contamination of the CR Encoder Scale 4. Disconnection, break, skew or damage of the CR Encoder FFC 5. Failure of the CR Encoder Sensor 6. Failure of the CR Motor Assy (the lead wire is broken or the connector is disconnected) 7. Failure of the Main Board	1. Check that no obstacle exist in the CR Motion Range. 2. Move the CR Unit by hand to see if it moves smoothly without getting stuck. 3. Check the timing belt for fraying or looseness. 4. Clean the CR Encoder Scale if it is contaminated. 5. Check the connector and the CR Encoder FFC for damage. 6. Replace the CR Encoder FFC with a new one. 7. Check the connector of the CR Motor Assy. 8. Replace the CR Motor Assy with a new one. 9. Replace the Main Board with a new one.	CN319 CN305	CN61 CN12

Error code	Error name	Possible cause	Confirmation procedure	Connector No.	
				ET-4800/ L5290/L5310 Series/ET-2800/ET-2820/ ET-2870/ET-2870U/L3260/ L3280 Series/ ET-2400/ET-2810/ET-2860/ L3250/L3270 Series	L3210/L3230 Series/L3200 Series/L1210/ L1230 Series/ ET-1810/ L1250/L1270 Series
000025	CR PID speed fall error	■ Operation failure of the CR Unit 1. The CR Unit was stopped by; • Obstacles such as jammed paper • Overload of the mechanism • Interfere with the ink system ■ Failed to read the CR Motor Encoder 2. The timing belt become loosened or jumping 3. Contamination of the CR Encoder Scale 4. Damage or skew of the CR Encoder FFC 5. Failure of the CR Motor Assy 6. Failure of the Main Board	1. Check that no obstacle exist in the CR Motion Range. 2. Check the CR Lock and Ink System Assy for any abnormality. 3. Check the timing belt for looseness. 4. Clean the CR Encoder Scale if it is contaminated. 5. Check the connector of the CR Encoder FFC. 6. Replace the CR Motor Assy with a new one. 7. Replace the Main Board with a new one.	CN319 CN305	CN61 CN12
000030	CR load position driving time error	Malfunction or crash of the firmware	1. Turn the printer off and back it on. 2. If the error still occurs after the restart, replace the Main Board.	---	---
000031	CR load position excess load error	■ The CR Motor Assy stopped running in the middle of the operation 1. The CR Unit was stopped by; • Obstacles such as jammed paper • Overload of the mechanism • Interfere with the Ink System Assy • Disengaging or breakage of the gears • Disengaging, fraying, jumping of the timing belt ■ Failed to read the CR Encoder 2. Contamination of the CR Encoder Scale 3. Failure of the CR Motor Assy (not completely broken) 4. Failure of the Main Board	1. Check that no obstacle exist in the CR Motion Range. 2. Check the CR lock and Ink System Assy for any abnormality. 3. Check the timing belt for fraying or looseness. 4. Check the load applied to the CR Unit by moving it by hand. 5. Check if the lubricant on the CR Shaft is adequate. 6. Check the CR drive mechanism. 7. Clean the CR Encoder Scale if it is contaminated. 8. Replace the CR Motor Assy with a new one. 9. Replace the Main Board with a new one.	CN319 CN305	CN61 CN12
000032	CR load position excess speed error	■ Failed to read the CR Encoder 1. Contamination of the CR Encoder Scale 2. Damage or skew of the CR Encoder FFC 3. Failure of the CR Encoder Sensor ■ Failure of the CR Motor Driver 4. Failure of the Main Board	1. Clean the CR Encoder Scale if it is contaminated. 2. Check the FFC of the CR Encoder. 3. Replace the CR Encoder Sensor with a new one. 4. Replace the Main Board with a new one.	CN319 CN305	CN61 CN12

Error code	Error name	Possible cause	Confirmation procedure	Connector No.	
				ET-4800/ L5290/L5310 Series/ET-2800/ET-2820/ ET-2870/ET-2870U/L3260/ L3280 Series/ ET-2400/ET-2810/ET-2860/ L3250/L3270 Series	L3210/L3230 Series/L3200 Series/L1210/ L1230 Series/ ET-1810/ L1250/L1270 Series
000033	CR load position reverse error	■ Operation failure of the CR Motor Assy, stopped by obstacles 1. CR was stopped by; • Obstacles such as jammed paper • Overload of the mechanism • Interfere with the Ink System Assy ■ Failed to read the CR Encoder 2. Jumping of the CR timing belt 3. Contamination of the CR Encoder Scale 4. Damage or skew of the CR Encoder FFC 5. Failure of the CR Encoder Sensor 6. Failure of the Main Board	1. Check that no obstacle exist in the CR Motion Range. 2. Check the CR lock and Ink System Assy for any abnormality. 3. Check the timing belt for fraying or looseness. 4. Clean the CR Encoder Scale if it is contaminated. 5. Check the CR Encoder FFC or the connector. 6. Replace the CR Encoder Sensor with a new one. 7. Replace the Main Board with a new one.	CN319 CN305	CN61 CN12

2.3.2.3 Printer (PF)

Error code	Error name	Possible cause	Confirmation procedure	Connector No.	
				ET-4800/ L5290/L5310 Series/ET-2800/ET-2820/ ET-2870/ET-2870U/L3260/ L3280 Series/ ET-2400/ET-2810/ET-2860/ L3250/L3270 Series	L3210/L3230 Series/L3200 Series/L1210/ L1230 Series/ ET-1810/ L1250/L1270 Series
000040	PF PID driving time error	Malfunction or crash of the firmware ☐ The PE Sensor remains in paper detection status and a paper jam error occurs instead of causing a fatal error.	1. Turn the printer off and back it on. 2. If the error still occurs after the restart, replace the Main Board.	---	---
000041	PF PID excess load error	■ The PF Motor Assy stopped running in the middle of the operation 1. The PF was stopped by; • Obstacles such as jammed paper • Overload of the paper feed mechanism • Disengaging or breakage of the gears ■ Failed to read the PF Encoder 2. Contamination of the PF Encoder Scale 3. Disconnection, break, skew or damage of the PF Motor Cable/ Encoder FFC 4. Failure of the PF Motor Assy (not completely broken) 5. Failure of the Main Board	1. Check that no pieces of paper or foreign objects exist in the paper path. 2. Check the load of the paper feed mechanism. 3. Check the wheel train of the PF drive and the timing belt for fraying or looseness. 4. Check the PF Encoder Scale for damage or contamination. 5. Check the PF Encoder FFC or the connector. 6. Replace the PF Motor Assy with a new one. 7. Replace the Main Board with a new one.	---	---
000042	PF PID excess speed error	■ Failed to read the PF Encoder 1. Contamination of the PF Encoder Scale 2. Skew or damage of the PF Encoder FFC 3. Failure of the PF Encoder Sensor ■ Failure of the PF Motor Driver 4. Failure of the Main Board	1. Clean the PF Encoder Scale if it is contaminated. 2. Check the PF Encoder FFC or the connector. 3. Replace the PF Encoder Sensor with a new one. 4. Replace the Main Board with a new one.	CN304 CN401	CN13 CN7

Error code	Error name	Possible cause	Confirmation procedure	Connector No.	
				ET-4800/ L5290/L5310 Series/ET-2800/ET-2820/ ET-2870/ET-2870U/L3260/ L3280 Series/ ET-2400/ET-2810/ET-2860/ L3250/L3270 Series	L3210/L3230 Series/L3200 Series/L1210/ L1230 Series/ ET-1810/ L1250/L1270 Series
000043	PF PID reverse error	■ Paper feed fails, stopped by obstacles 1. Paper feed was stopped by; • Obstacles such as jammed paper • Overload of the paper feed mechanism • Disengaging or tooth breakage of wheel train of the paper feed mechanism ■ Failed to read the PF Encoder 2. Contamination of the PF Encoder Scale 3. Skew or damage of the PF Encoder FFC 4. Failure of the PF Encoder Sensor 5. Failure of the Main Board	1. Check that no pieces of paper or foreign objects exist in the paper path. 2. Check the load of the paper feed mechanism. 3. Check the wheel train of the PF drive and the timing belt. 4. Clean the PF Encoder Scale if it is contaminated. 5. Check the PF Encoder FFC or the connector. 6. Replace the PF Encoder Sensor with a new one. 7. Replace the Main Board with a new one.	CN304 CN401	CN13 CN7
000044	PF PID lock error	■ The PF Motor Assy did not run or obstacles exist in the paper path 1. Overload of the paper feed mechanism 2. The PF timing belt become frayed, jumping, or the wheel train of paper feed mechanism is disengaged or its tooth is broken ■ Failed to read the PF Encoder 3. Contamination of the PF Encoder Scale 4. Disconnection, break, skew or damage of the PF Encoder FFC 5. Failure of the PF Encoder Sensor 6. Failure of the PF Motor Assy (the lead wire is broken or the connector is disconnected) 7. Failure of the Main Board	1. Check that no jammed paper exist in the paper path. 2. Check the load of the PF. 3. Check the wheel train of the PF drive and the timing belt for fraying or looseness. 4. Clean the PF Encoder Scale if it is contaminated. 5. Check the PF Encoder FFC or the connector. 6. Replace the PF Encoder Sensor with a new one. 7. Check the connector of the PF Motor Assy. 8. Replace the PF Motor Assy with a new one 9. Replace the Main Board with a new one.	CN304 CN401	CN13 CN7
000050	PF load position driving time error	Malfunction or crash of the firmware	1. Turn the printer off and back it on. 2. If the error still occurs after the restart, replace the Main Board.	---	---

Error code	Error name	Possible cause	Confirmation procedure	Connector No.	
				ET-4800/ L5290/L5310 Series/ET-2800/ET-2820/ ET-2870/ET-2870U/L3260/ L3280 Series/ ET-2400/ET-2810/ET-2860/ L3250/L3270 Series	L3210/L3230 Series/L3200 Series/L1210/ L1230 Series/ ET-1810/ L1250/L1270 Series
000051	PF load position excess load error	■ The PF Motor Assy stopped running in the middle of the operation 1. The PF was stopped by; • Obstacles such as jammed paper • Overload of the paper feed mechanism • Disengaging or breakage of the gears ■ Failed to read the PF Encoder 2. Contamination of the PF Encoder Scale 3. Failure of the PF Motor Assy (not completely broken) 4. Failure of the Main Board	1. Check that no pieces of paper or foreign objects exist in the paper path. 2. Check the load of the paper feed mechanism. 3. Check the wheel train of the PF drive and the timing belt for fraying or looseness. 4. Clean the PF Encoder Scale if it is contaminated. 5. Replace the PF Motor Assy with a new one 6. Replace the Main Board with a new one.	---	---
000052	PF load position excess speed error	■ Failed to read the PF Encoder 1. Contamination of the PF Encoder Scale 2. Skew or damage of the PF Encoder FFC 3. Failure of the PF Encoder Sensor ■ Failure of the PF Motor Driver 4. Failure of the Main Board	1. Clean the PF Encoder Scale if it is contaminated. 2. Check the PF Encoder FFC or the connector. 3. Replace the PF Encoder Sensor with a new one. 4. Replace the Main Board with a new one.	CN304 CN401	CN13 CN7
000053	PF load position reverse error	■ Paper feed fails, stopped by obstacles 1. Paper feed was stopped by; • Obstacles such as jammed paper • Overload of the paper feed mechanism • Disengaging or tooth breakage of wheel train of the paper feed mechanism ■ Failed to read the PF Encoder 2. Contamination of the PF Encoder Scale 3. Skew or damage of the PF Encoder FFC 4. Failure of the PF Encoder Sensor 5. Failure of the Main Board	1. Check that no pieces of paper or foreign objects exist in the paper path. 2. Check the load of the paper feed mechanism. 3. Check the wheel train of the PF drive and the timing belt for fraying or looseness. 4. Clean the PF Encoder Scale if it is contaminated. 5. Check the PF Encoder FFC or the connector. 6. Replace the PF Encoder Sensor with a new one. 7. Replace the Main Board with a new one.	CN304 CN401	CN13 CN7

2.3.2.4 Printer (PE Sensor)

Error code	Error name	Possible cause	Confirmation procedure	Connector No.	
				ET-4800/ L5290/L5310 Series/ET-2800/ET-2820/ ET-2870/ET-2870U/L3260/ L3280 Series/ ET-2400/ET-2810/ET-2860/ L3250/L3270 Series	L3210/L3230 Series/L3200 Series/L1210/ L1230 Series/ ET-1810/ L1250/L1270 Series
030001	PE detector error	■ PE Sensor damage ■ Failure of the Main Board ☐ Occurs when the light value became lower than the threshold value in light value adjustment.	1. Replace the Main Board with a new one.	---	---
030003	PE sensor light value adjust error	■ PE Sensor damage ■ Failure of the Main Board ☐ Cannot detect paper even the light value was raised to maximum in light value adjustment.	1. Replace the Main Board with a new one.	---	---

2.3.2.5 Printer (Power)

Error code	Error name	Possible cause	Confirmation procedure	Connector No.	
				ET-4800/ L5290/L5310 Series/ET-2800/ET-2820/ ET-2870/ET-2870U/L3260/ L3280 Series/ ET-2400/ET-2810/ET-2860/ L3250/L3270 Series	L3210/L3230 Series/L3200 Series/L1210/ L1230 Series /ET-1810/ L1250/L1270 Series
030005	Abnormal temperature of internal PS Unit (less than lower limit value) *Occurs after paper feed, before printing started	■ Break or damage of the Power Supply Cable ■ Failure of the PS Unit (Thermistor open failure) ■ Failure of the Main Board (Failure of circuit to detect temperature)	1. Replace the Power Supply Cable with a new one. 2. Replace the PS Unit with a new one. 3. Replace the Main Board with a new one.	---	---
030006	Abnormal power supply internal temperature (above the upper limit value) *Occurs after paper feed, before printing started	■ Failure of the PS Unit (Over temperature rise) 1. Commingling of foreign object with PS Unit (Thermistor short, Over temperature rise by leakage) ■ Failure of the Main Board 2. Foreign object attached to Main Board or connector 3. Failure of circuit to detect temperature	1. Replace the PS Unit with a new one. 2. Replace the Main Board unit with a new one.	---	---

Confidential

2.3.2.6 Printer (Head/CSIC)

Error code	Error name	Possible cause	Confirmation procedure	Connector No.	
				ET-4800/ L5290/L5310 Series/ET-2800/ET-2820/ ET-2870/ET-2870U/L3260/ L3280 Series/ ET-2400/ET-2810/ET-2860/ L3250/L3270 Series	L3210/L3230 Series/L3200 Series/L1210/ L1230 Series/ ET-1810/ L1250/L1270 Series
031001	HeadHot detect error (pre printing)	■ Disconnection, break, skew or damage of the Head FFC ■ Overheat of the Print Head 1. Failure of the Print Head 2. Failure of the Main Board ☐ Occurs in-between print passes (after printing one pass and before printing the next pass)	1. Check the Head FFC for disconnection, break, skew or damage. 2. Replace the Print Head with a new one. 3. Replace the Main Board with a new one.	CN301	CN102
031002	HeadHot detect error (after flushing)	■ Disconnection, break, skew or damage of the Head FFC ■ Overheat of the Print Head 1. Failure of the Print Head 2. Failure of the Main Board ☐ Occurs every after ink flushing operation (Flushing before starting printing, flushing after manual cleaning and etc.)	1. Check the Head FFC for disconnection, break, skew or damage. 2. Replace the Print Head with a new one. 3. Replace the Main Board with a new one.	CN301	CN102
031003	Transistor temperature error	■ Protect function of head driving circuit operated when Continuing high load printing under high temperature environment ■ Failure of the Main Board ☐ Occurs after receiving a print job and starting printing	Replace the Main Board with a new one.	---	---
031004	Head temperature error	■ Disconnection, break, skew or damage of the Head FFC ☐ Occurs after receiving a print job and starting printing Failure of the thermistor inside the Print Head Temperature around the Print Head is out of the range from -20 to 80 degrees C.	1. Check the Head FFC for disconnection, break, skew or damage. 2. Replace the Print Head with a new one. 3. Replace the Main Board with a new one.	CN301	CN102
031005	Head hot detect error (when changing ink)	■ Disconnection, break, skew or damage of the Head FFC ■ Overheat of the Print Head 1. Failure of the Print Head 2. Failure of the Main Board ☐ Occurs when changing the Ink Cartridge. (When cartridge moved to the replacing position.)	1. Check the Head FFC for disconnection, break, skew or damage. 2. Replace the Print Head with a new one. 3. Replace the Main Board with a new one.	CN301	CN102

Error code	Error name	Possible cause	Confirmation procedure	Connector No.	
				ET-4800/ L5290/L5310 Series/ET-2800/ET-2820/ ET-2870/ET-2870U/L3260/ L3280 Series/ ET-2400/ET-2810/ET-2860/ L3250/L3270 Series	L3210/L3230 Series/L3200 Series/L1210/ L1230 Series/ ET-1810/ L1250/L1270 Series
031006	Blowout of a fuse error (Head)	■ Failure of the power source for the Print Head 1. Failure of the circuit Disconnection, break, skew, or damage of the Head FFC 2. Blowout of fuse on the Main Board Failure of the Print Head ☐ Occurs at power-on, when replacing the ink cartridge, in-between print passes, and after flushing operation	1. If the fuse has not blown out 1) Check the Head FFC for disconnection, break, skew or damage. 2. If the fuse has blown out 1) Replace the Main Board with a new one. 3. In the other cases 1) Replace the Print Head with a new one.	CN301	CN102
031008	VBS overvoltage error	1. Head FFC failure (skew, foreign object attached) 2. Failure of the head 3. Failure of the Main Board (Occurrence frequency based on past record is 1. > 2. > 3.)	1. Check the Head FFC. 2. Replace the Print Head with a new one. 3. Replace the Main Board with a new one.	CN301	CN102
033003	Other Ink device error	■ Error in the printer settings ■ Failure of the Main Board ☐ Occurs at power-on	1. Turn the printer off and back it on. 2. If the error still occurs after the restart, replace the Main Board.	---	---
033004	Other Ink device error				
033005	Other Ink device error				

2.3.2.7 Printer (Others)

Error code	Error name	Possible cause	Confirmation procedure	Connector No.	
				ET-4800/ L5290/L5310 Series/ET-2800/ET-2820/ ET-2870/ET-2870U/L3260/ L3280 Series/ ET-2400/ET-2810/ET-2860/ L3250/L3270 Series	L3210/L3230 Series/L3200 Series/L1210/ L1230 Series/ ET-1810/ L1250/L1270 Series
034001	Home position error	This error code is not displayed but the error history is saved. ■ The carriage does not move 1. Overload of the carriage drive mechanism (paper jam, foreign object) 2. Failure of the Ink System Assy 3. Failure of the CR Motor Assy 4. Failure of the Main Board	1. Check that no obstacle exist in the carriage motion range. 2. Manually unlock the carriage. (If unlocking is impossible, the problem caused by failure of the Ink System Assy.) 3. Check the load applied to the CR Unit by moving it by hand. 4. Turn the printer on and check if the carriage moves. If it still does not move, the motor is broken or failure of the Main Board.	---	---
034004	Paper jam release impossible error	■ Main Board failure ■ Something mechanical failure with PF motor.	1. Check the mechanism around PF motor and whether PF motor works normally or not. 2. Replace the PF motor with a new one. 3. Replace the Main Board with a new one.	Main Board CN304	Main Board CN13
060001	Factor error other than printer device	Depend on user environment	Customized support	---	---
060002	Driver mismatch error	■ Non-supported printer driver ■ Mismatch between custom printer driver and custom printer	Check the OS and the version of the printer driver.	---	---

2.3.2.8 System Error

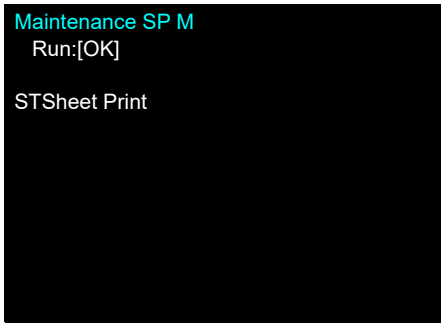
Error code	Error name	Possible cause	Confirmation procedure	Connector No.	
				ET-4800/ L5290/L5310 Series/ET-2800/ET-2820/ ET-2870/ET-2870U/L3260/ L3280 Series/ ET-2400/ET-2810/ET-2860/ L3250/L3270 Series	L3210/L3230 Series/L3200 Series/L1210/ L1230 Series/ ET-1810/ L1250/L1270 Series
202620	Wi-Fi Board failure	Failure or disconnection of the Wi-Fi Board	1. Check the Wi-Fi Board. 2. Check the FFC.	---	---
202623	NFC Board failure	Failure or disconnection of the NFC Board	1. Check the NFC Board. 2. Check the FFC.	---	---
203004	Panel Unit failure	Panel Unit failure	1. Check the Panel Unit. 2. Check the FFC.	---	---
205102	Card Board failure	Card Board failure	1. Check the Card Board. 2. Check the FFC.	---	---
30xxxx	Firmware bug	Firmware bug	Customized support	---	---

2.4 Service Support Mode (ET-4800/L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/L3260/ L3280 Series only)

☐ Overview

Service support mode is a service dedicated special mode that can be started by a special operation from the adjustment program(p143), and allows you to execute functions including service status sheet prinnt. Printer mode can also be started from the adjustment program.

☐ Structure of service support mode menu



LCD Model

Figure 2-2. Service support mode: top menu

Item	Display	Explanation	When to use
Printer mode	Printer Mode	Allows you to perform adjustment with the SCN Unit removed.	When repairing
Service status sheet print (p.66)	STSheet Print	In addition to the normal status sheet information, you can check information needed for servicing.	Troubleshooting

■ **Just rebooting does not return to normal mode. You need to change from Adjustment program to normal mode.**

2.4.1 Status Sheet Information

This section explains about each item printed on the status sheets.
The following status sheets can be printed from the printer.

☐ Overview of Status Sheets

- ■ Configuration Status Sheet: printer settings information
- ■ Supply Status Sheet: supported model numbers of consumables or periodic replacement parts, and the total number of sheets fed into the printer.
- ■ Usage History Sheet: usage history such as the total number of printed pages per function.
- ■ Service Status Sheet: in addition to the information included in the above three sheets, information required for servicing is also provided. However, the status sheet can be printed only in service support mode. (p.65)

☐ Status Sheet Items

- ■ Configuration Status Sheet (total pages: 1 sheet)

Item			Explanation
Hardware Configuration	Device ID		Device ID (product name) is displayed.
	Serial Number		The serial number of the product is displayed.
	<Hardware>	Memory Capacity	Capacity of the memory inside the product is displayed.
	<Version>	Firmware	Version of the firmware is displayed.
		Main Firmware	Version of the main firmware is displayed.
		QPIT	Version of the QPIT is displayed.
Basic settings	Language		The current language setting is displayed.
	Sleep timer		Whether the sleep timer is enabled or not is displayed. When enabled, the time period before the product enters sleep mode is also displayed.
	Power Off Timer	Power Off If Inactive	Whether the setting is enabled or not is displayed.
		Power Off If Disconnected	Whether the setting is enabled or not is displayed.
Printer settings	Auto Error Solver		Whether the auto error resolver options are enabled or not is displayed.
	Ink Drying Time		The Ink Drying Time when duplex printing is displayed.
	PC connection via USB		Whether the setting is enabled or not is displayed.
	Quiet Mode		Whether the setting is enabled or not is displayed.

Item				Explanation
Paper source settings	Paper cassette	Cassette 1	Paper Size	Paper size settings for each of the paper sources.
			Paper Type	Paper type settings for each of the paper sources.
	A4/Letter Auto Switching			Whether the auto switching function is enabled or not is displayed.
	Paper Size Notice			Whether the setting is enabled or not is displayed.
	Paper Type Notice			Whether the setting is enabled or not is displayed.

■ Supply Status Sheet (total pages: 1 sheet)

Item				Explanation
Hardware Configuration	Device ID			Device ID (product name) is displayed.
	Serial Number			The serial number of the product is displayed.
	<Hardware>	Memory Capacity		Capacity of the memory inside the product is displayed.
	<Version>	Firmware		Version of the firmware is displayed.
		Main Firmware		Version of the main firmware is displayed.
		QPIT		Version of the QPIT is displayed.
Supply Status	Ink Bottle	Black	Product number	Product number of the ink bottle is displayed.
	Maintenance Box		Product number	Product number of the Maintenance Box is displayed.

■ Usage History Sheet (total pages: 1 sheet)

Item				Explanation
Hardware Configuration	Device ID			Device ID (product name) is displayed.
	Serial Number			The serial number of the product is displayed.
	<Hardware>	Memory Capacity		Capacity of the memory inside the product is displayed.
	<Version>	Firmware		Version of the firmware is displayed.
		Main Firmware		Version of the main firmware is displayed.
		QPIT		Version of the QPIT is displayed.
Usage History		First Time Printing		The date and time when the printer printed for the first time is displayed.
Number of Pages		<Sorted by Function>	Total Number of Pages	The total number of printed pages is displayed.
			Total Number of 2-Sided Printing Pages	The total number of printed 2-sided pages is displayed.
			Total Number of 1-Sided Printing Pages	The total number of printed one-sided pages is displayed.

Item			Explanation
Number of Pages	<Sorted by Paper Size> (1-sided/2-sided)	A3/Ledger	The total number of printed pages per paper size is displayed. Detailed count per function (one-sided/2-sided, monochrome/color) is also displayed for each paper size.
		A4/Letter	
		A5	
		A6	
		B4/Legal	
		B5	
		Envelope	
		Other	
	<Sorted by Usage>	B&W Copy	The total number of printed pages for each of the purposes is displayed.
		B&W Print from Computer or Mobile Device	
		B&W Print from Memory Device or Other Functions	
	<Sorted by Printer Language>	ESC/P-R	The version of each of the printer language is displayed.
		Other	
Number of Scan Pages	B&W Scan		Number of sheets scanned in monochrome.
	Color Scan		Number of sheets scanned in color.

■ Service Status Sheet (total pages: 4 sheets)

Item			Explanation
Hardware Configuration	Device ID		Device ID (product name) is displayed.
	Serial Number		The serial number of the product is displayed.
	<Hardware>	Memory Capacity	Capacity of the memory inside the product is displayed.
	<Version>	Firmware	Version of the firmware is displayed.
		Main Firmware	Version of the main firmware is displayed.
		QPIT	Version of the QPIT is displayed.
Basic Settings	Sleep Timer		Whether the sleep timer is enabled or not is displayed. When enabled, the time period before the product enters sleep mode is also displayed.
	Power Off Timer (for models for Euro only)	Power Off If Inactive	Whether the setting is enabled or not is displayed.
		Power Off If Disconnected	Whether the setting is enabled or not is displayed.
	Power Off Settings (excluding models for Euro)		Whether the auto power off setting is enabled or not is displayed. When enabled, the time period before the printer automatically turns off is also displayed.

Item				Explanation
Printer settings	Ink Drying Time			The Ink Drying Time when duplex printing is displayed.
	Quiet Mode			Whether the setting is enabled or not is displayed.
Paper Source Settings	Paper Cassette	Cassette 1	Paper Size	Paper size settings for each of the paper sources.
			Paper Type	Paper type settings for each of the paper sources.
Option Settings	Fax Function			Always “Off” is displayed.
Supply Status	Ink Bottle	Black	Product number	Product number of the ink bottle is displayed.
	Maintenance Box		Product number	Product number of the Maintenance Box is displayed.
Usage History	First Time Printing			The data and time the printer printed for the first time are displayed.
	<Sorted by Function>		Total Number of Pages	The total number of pages printed by the printer is displayed.
	<Sorted by Paper Size> (1-sided/2-sided)		A3/Ledger	The total number of printed pages per paper size is displayed. Detailed count per function (one-sided/2-sided, monochrome/color) is also displayed for each paper size.
			A4/Letter	
			A5	
			A6	
			B4/Legal	
			B5	
			Envelope	
			Others	
	<Sorted by Usage>		B&W Copy	The total number of printed pages for each of the purposes is displayed.
			B&W Print from Computer or Mobile Device	
			B&W Print from Memory Device or Other Functions	
	<Other>		The Cumulative number of paper jam	The total number of times a paper jam error occurs is displayed.
	Number of Sheets Scanned		Document Table (Number of pages)	The total number of pages scanned on the scanner glass is displayed.
	Number of Sheets Loaded		Cassette 1/Manual feed	The total number of printed pages per paper source is displayed.
Status	Printer Error			Status of the product (error occurring state) is displayed.
	Scanner Error			Always “---” is displayed.
	Fax Error			Always “---” is displayed.
	Network Error			Status of the product (error occurring state) is displayed.
	Other Error			

CHAPTER

3

DISASSEMBLY/ASSEMBLY

3.1 Overview

This chapter describes procedures for disassembling the main parts/units of ET-4800/L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series/ET-2400/ET-2810/ET-2860/L3250/L3270 Series/L3210/L3230 Series/L3200 Series/L1210/L1230 Series/ET-1810/L1250/L1270 Series. Unless otherwise specified, disassembled parts/units can be reassembled by reversing the disassembly procedure. Disassembly/reassembly precautions and tips are give in "3.3.3 Repairing Major Components Disassembly/Assembly Procedure" (p109) and "3.4 Detailed Disassembly/Reassembly Procedure for each Part/Unit" (p134). See the sections as necessary.

Make sure to read " Safety Precautions" (p3) before starting work.

When you have to remove units or parts that are not described in this chapter, see the exploded diagrams of SPI (Service Parts Information).

3.1.1 Tools

Use only specified tools to avoid damaging the printer.

Table 3-1. Tools

Name	Availability	EPSON Part Code
(+) Phillips screwdriver #1	✓	1080530
(+) Phillips screwdriver #2	✓	---
Flathead screwdriver	✓	---
Flathead Precision screwdriver #1	✓	---
Tweezers	✓	---
Longnose pliers	✓	---
Acetate tape	---	1003963

Note 1: "Availability" means that use of a commercially available one is permitted.
2: EPSON provides the tools listed with EPSON part code.

3.1.2 Jigs

Table 3-2. Jigs

Name	Quantity	EPSON Part Code
Thickness gauge (1.45 mm)	1	Commercially available
Thickness gauge (1.95 mm)	1	
Tube clip	4	
Syringe	4	
Case for extruding ink	4	

3.1.3 Locations of the Parts/Units

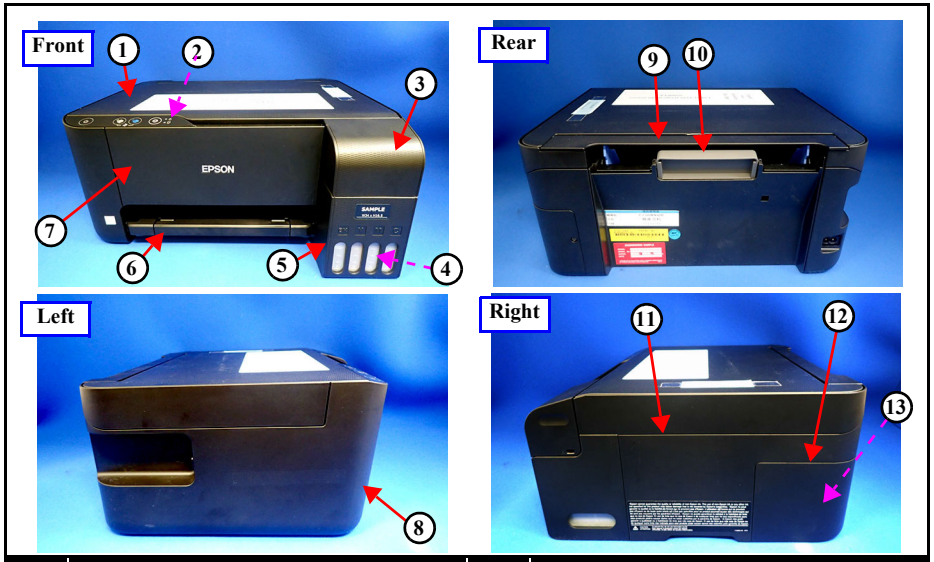
This section shows the locations of the main parts/units.

CHECK

The parts/units which can not be seen in the following pictures are indicated in dotted lines (- - →).

EXTERIOR PARTS

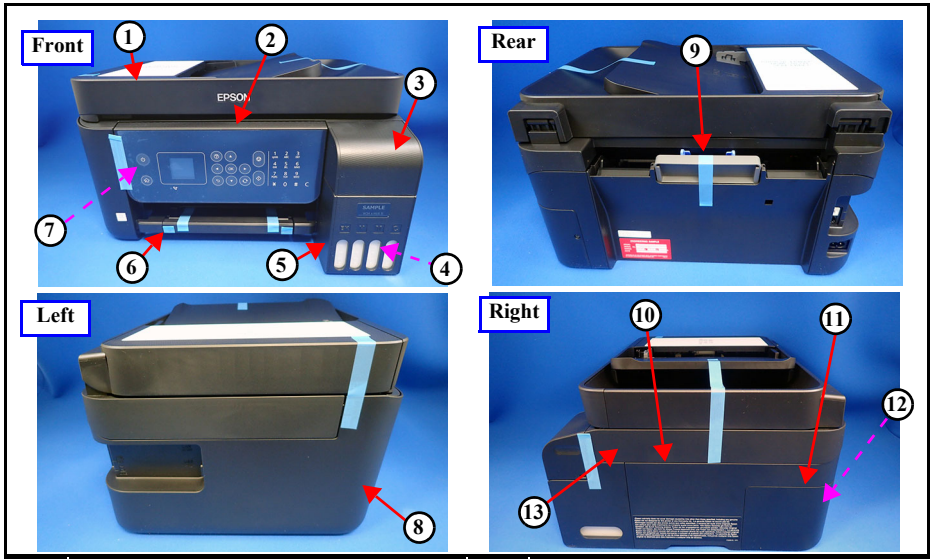
☐ ET-2400/ET-2810/ET-2860/L3250/L3270 Series/L3210/L3230 Series/ L3200 Series



No.	Name	No.	Name
1	Scanner Unit (p95)	8	Housing Left (p93)
2	Panel Board (p95)	9	Cover ASF (p93)
3	Cover Tank (p93)	10	Paper Support (p95)
4	Tank Supply Ink Assy (x4) (p93)	11	Housing Right (p93)
5	Housing Front Right (p93)	12	Cover Ink Eject (p93)
6	Stacker Assy (p95)	13	Porous Pad Assy (p93)
7	Cover Front Assy (p93)		

Figure 3-1. Exterior Parts (ET-2400/ET-2810/ET-2860/L3250/L3270 Series/ L3210/L3230 Series/L3200 Series)

☐ ET-4800/L5290/L5310 Series

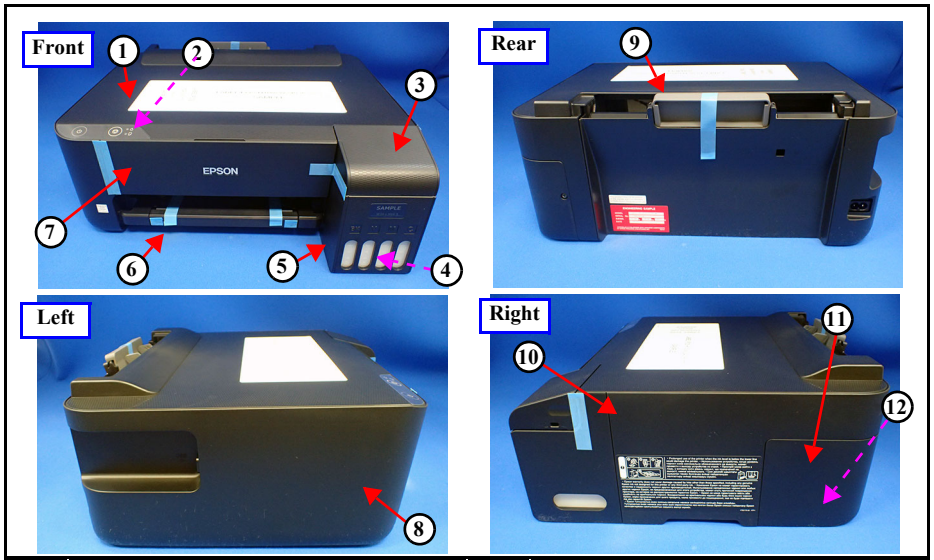


No.	Name	No.	Name
1	ADF Unit (p102)	8	Housing Left (p98)
2	Panel Unit (p102)	9	Paper Support (p100)
3	Cover Tank (p98)	10	Housing Right (p98)
4	Tank Supply Ink Assy (x4) (p98)	11	Cover Ink Eject (p98)
5	Housing Front Right (p98)	12	Porous Pad Assy (p98)
6	Stacker Assy (p100)	13	SCN Unit (p102)
7	Cover Front Assy (p98)		

Figure 3-2. Exterior Parts (ET-4800/L5290/L5310 Series)

Confidential

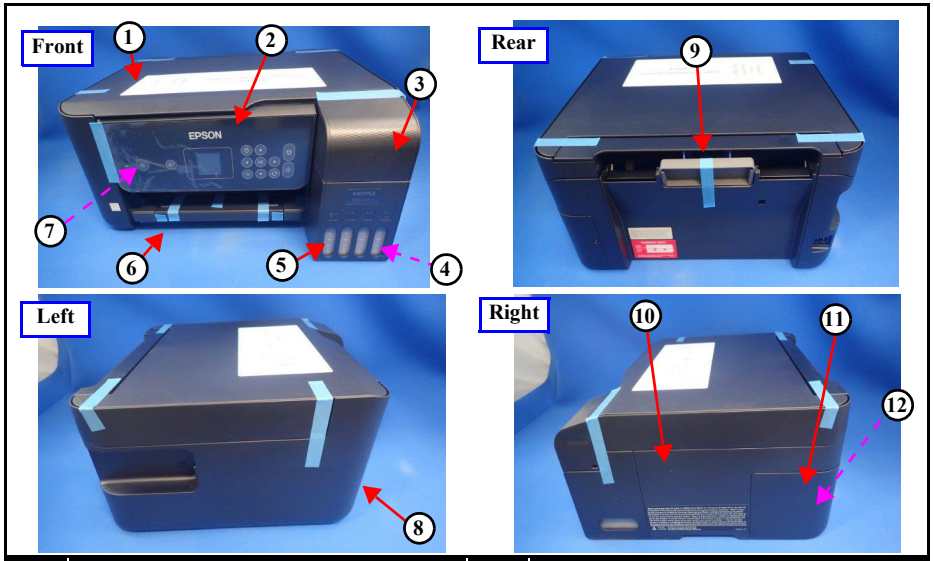
☐ L1210/L1230 Series/ET-1810/L1250/L1270 Series



No.	Name	No.	Name
1	Housing Upper Assy (p106)	7	Cover Front Assy (p104)
2	Panel Board (p106)	8	Housing Left (p104)
3	Cover Tank (p104)	9	Paper Support (p106)
4	Tank Supply Ink Assy (x4) (p104)	10	Housing Right (p104)
5	Housing Front Right (p104)	11	Cover Ink Eject (p104)
6	Stacker Assy (p106)	12	Porous Pad Assy (p104)

Figure 3-3. Exterior Parts (L1210/L1230 Series)

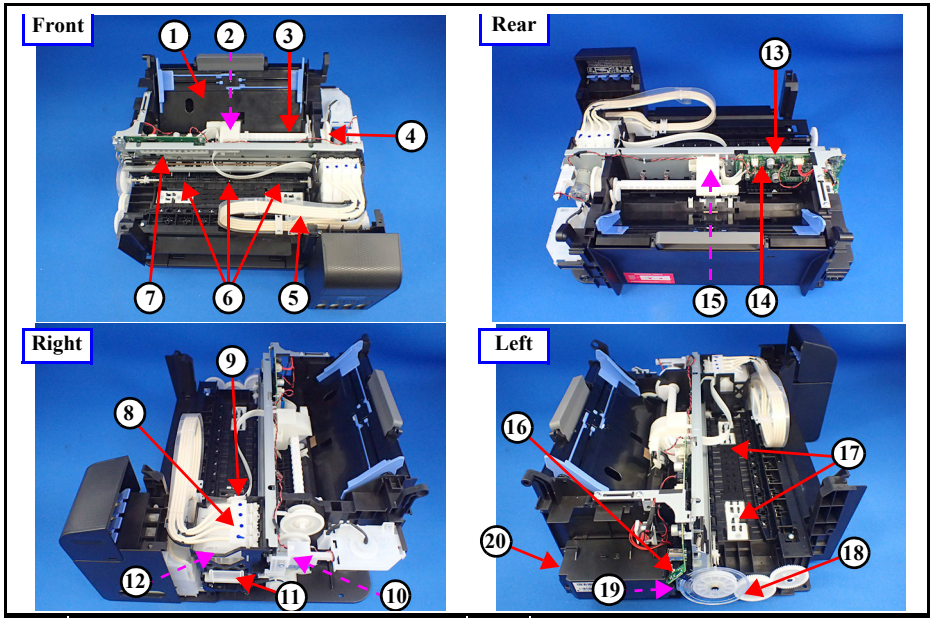
☐ ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series



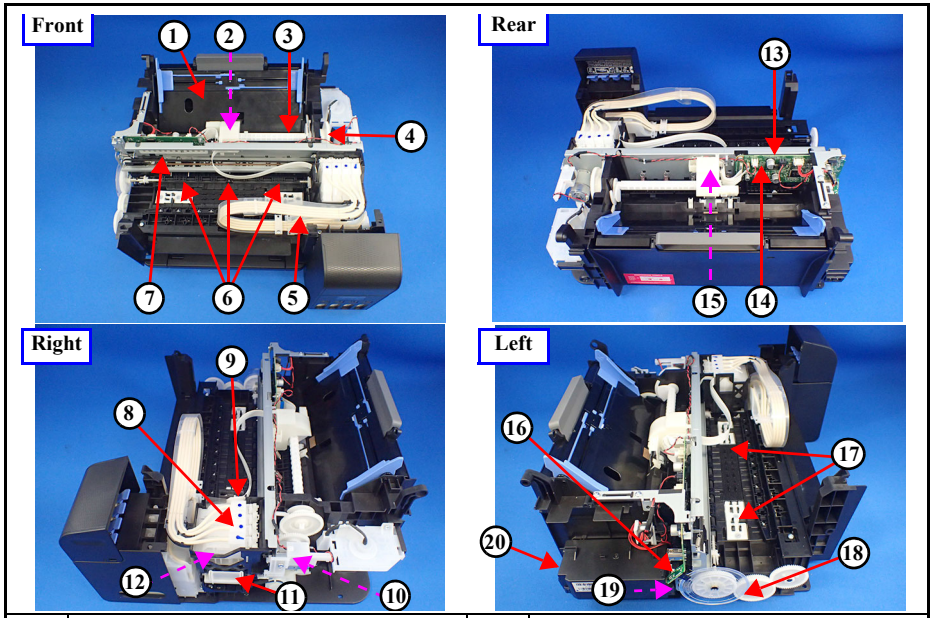
No.	Name	No.	Name
1	SCN Unit Assy (p100)	7	Cover Front Assy (p98)
2	Panel Unit (p102)	8	Housing Left (p98)
3	Cover Tank (p98)	9	Paper Support (p100)
4	Tank Supply Ink Assy (x4) (p98)	10	Housing Right (p98)
5	Housing Front Right (p98)	11	Cover Ink Eject (p98)
6	Stacker Assy (p100)	12	Porous Pad Assy (p98)

Figure 3-4. Exterior Parts (ET-2800/ET-2820/ET-2870/ET-2870U/L3260/ L3280 Series)

PRINTER MECHANISM



No.	Name	No.	Name
1	ASF Hopper Assy (p100)	11	Ink System Assy (p98)
2	RTD Roller Assy (p100)	12	Print Head (p100)
3	Shaft LD Assy (p103)	13	Main Board (p99)
4	Clutch (p103)	14	Wi-Fi Board (p100) (ET-4800/L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series/ET-2400/ET-2810/ET-2860/L3250/L3270 Series ET-1810/L1250/L1270 Series only)
5	Adapter Tube (p100)	15	Lever Detector PE Assy (p103)
6	PGU Right Assy (p99)/PGU Center Assy (p99)/PGU Left Assy (p101)	16	PF Encoder (p99)
7	CR Scale & Spring (p99)	17	Porous Pad PG Front (x6) (p100)
8	Adapter Assy (BK) (p100)/Adapter Assy (CL)(x3) (p100)	18	PF Scale (p99)
9	CR Unit (p101)	19	PF Motor Assy (p99)



10	CR Motor Assy (p101)	20	PS Unit (p99)

Figure 3-5. Printer Mechanism

3.1.4 Standard Operation Time for Servicing the Product

The following are the standard operation time for servicing the product. This standard operation time was determined based on the MTTR result measured using the prototype of ET-4800/L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series/ET-2400/ET-2810/ET-2860/L3250/L3270 Series/L3210/L3230 Series/L3200 Series/L1210/L1230 Series/ET-1810/L1250/L1270 Series.
The underlined parts/units are supplied as After Service Parts.

☐ ET-4800/L5290/L5310 Series

Table 3-3. Standard Operation Time

Parts/Unit	Time		
	Replacement	Adjustment/ inspection	Total
Cover Front Assy	0:08		0:08
Cap Tank	0:10		0:10
Hinge Cap Tank	0:15		0:15
Stacker Assy	0:12		0:12
Stacker Support	0:22		0:22
Stacker Main	0:22		0:22
Paper Support	0:16		0:16
ADF/SCN Unit Assy	2:03	2:32	4:35
ADF Unit	2:58		2:58
Document Mat	3:50		3:50
Document Support ADF	3:12		3:12
Cover Base ADF	3:26		3:26
Pad ADF Assy	4:23		4:23
Cover Base ADF	4:12		4:12
Sheet ADF Paper Guide	4:39		4:39
Panel FFC Cover	2:11		2:11
Panel Unit	3:01		3:01
SCN Unit	2:58		2:58
Housing Upper SCN Assy	4:04		4:04

Table 3-3. Standard Operation Time

Parts/Unit	Time		
	Replacement	Adjustment/ inspection	Total
Housing Lower SCN Assy	2:23		2:23
Panel FFC	2:47		2:47
Stand SC Assy	2:24		2:24
Stand SC Spring	3:09		3:09
Stand SC	3:16		3:16
Stand SC Lock	3:16		3:16
Cover Main Board	4:55		4:55
Cover CR Motor	4:55		4:55
Pin Porous Pad	2:08		2:08
Porous Pad PG Front	2:16	0:10	2:26
Wi-Fi Board	2:11		2:11
ASF Hopper Assy	3:01	2:46	5:47
Hopper Spring	3:11		3:11
RTD Roller Spring	3:26		3:26
RTD Roller Assy	3:48		3:48
Lever Paper Return	5:32		5:32
Adapter Assy (CL)	2:26		2:26
Adapter Assy (BK)	2:26		2:26
Holder Board	2:47		2:47
Print Head	3:48	16:43	20:31
Plate Tube Holder Starwheel	2:25		2:25
Sheet Guide Tube Support	3:35		3:35
Clamp Tube	3:43		3:43
Adapter Tube	6:09		6:09
Holder Starwheel Assy	7:05	0:25	7:30
Rear Paper Sensor Lever Spring	2:25		2:25
Rear Paper Sensor Lever	2:52		2:52
PE Sensor Lever Spring	2:36		2:36
Holder LD Assy	3:41		3:41

Table 3-3. Standard Operation Time

Parts/Unit	Time		
	Replacement	Adjustment/ inspection	Total
Sheet Stopper ASF	3:57		3:57
Holder LD	3:57		3:57
Rear Paper Sensor	4:06		4:06
Lever Detector PE Assy	4:41	1:36	6:17
Shaft LD Assy	4:47	2:46	7:33
ASF Roller Clutch Assy	5:03		5:03
Spure Gear Clutch 45.6	5:11		5:11
Extension Spring 0.137	5:25		5:25
Clutch	5:34		5:34
Holder Clutch	5:31		5:31
Cover Ink Eject	0:17		0:17
Porous Pad Assy	0:32	0:10	0:42
Porous Pad Ink Eject 1	0:39		0:39
Porous Pad Ink Eject 2	0:39		0:39
Porous Pad Ink Eject 3	0:39		0:39
Housing Ink Eject	0:39		0:39
Housing Right	1:31		1:31
Holder Housing Ink Eject	2:16		2:16
Holder Scale CR	2:19		2:19
Tube Guide	3:02		3:02
Key Slot Assy	4:22		4:22
Cover Tank	4:33		4:33
Housing Front Right	5:16		5:16
Tank Supply Ink Assy	5:59		5:59
Porous Pad Tank Upper	5:21		5:21
Ink System Assy	2:34		2:34
Porous Pad Ink Eject Lower	2:54		2:54
Lock CR	2:54		2:54
Extension Spring 0.8	2:54		2:54

Table 3-3. Standard Operation Time

Parts/Unit	Time		
	Replacement	Adjustment/ inspection	Total
Lever Change Assy	15:42		15:42
Combination Gear 36.8-15.6	15:50		15:50
Combination Gear18-28.8	15:51		15:51
ASF Combination Gear Shaft	15:56		15:56
Housing Left	3:13		3:13
PS Unit	4:44	2:57	7:41
FAX Unit	6:18		6:18
CR Scale & Spring	4:41		4:41
PF Encoder FFC	3:23		3:23
PF Encoder	3:47		3:47
PF Scale	3:57		3:57
PF Grounding Spring	4:17		4:17
PF Motor Assy	5:08	0:17	5:25
Frame Main Support	3:51		3:51
Main Board	5:44	10:33	16:17
Cover Transistor	6:02		6:02
CR Driven Pulley & Spring	7:08		7:08
PGU Center Spring	9:42		9:42
PGU Center Assy	11:02	5:32	16:34
PGU Right Spring	9:42		9:42
PGU Right Assy	10:39	5:32	16:11
Main Frame Assy	9:29	6:26	15:55
CR Motor Assy	10:36	6:26	17:02
CR Unit	11:32		11:32
CR Belt	11:50		11:50
Head Grounding Plate	12:12		12:12
CR Encoder	12:03		12:03
Head FFC Assy	13:04		13:04
FFC Holder	13:14		13:14

Table 3-3. Standard Operation Time

Parts/Unit	Time		
	Replacement	Adjustment/ inspection	Total
Head FFC	13:29		13:29
CR Encoder FFC	13:29		13:29
Main Frame	12:12		12:12
PGU Spring L / R	12:41		12:41
PGU Left Assy	14:24	5:32	19:56
EJ Roller Gear	9:40		9:40
EJ Roller Shaft	10:00	0:25	10:25
Combination Gear	10:12		10:12
Frame Base Assy	10:12		10:12
PF Roller Assy	10:40	0:42	11:22
Holder Core Fax	10:34		10:34
Ferrite Core FFC	10:34		10:34
Square Nut	10:20		10:20

☐ ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series

Table 3-4. Standard Operation Time

Parts/Unit	Time		
	Replacement	Adjustment/ inspection	Total
Cover Front Assy	0:08		0:08
Cover ASF	0:08		0:08
Cap Tank	0:10		0:10
Hinge Cap Tank	0:15		0:15
Stacker Assy	0:12		0:12
Stacker Support	0:22		0:22
Stacker Main	0:22		0:22
Paper Support	0:16		0:16
SCN Unit Assy	2:03	2:32	4:35
Panel FFC Cover	2:11		2:11
Panel Unit	3:01		3:01
SCN Unit	3:01		3:01
Scanner Cover Assy	3:24		3:24
Document Mat	4:16		4:16
Scanner Cover	2:03		2:03
Housing Upper SCN Assy	4:04		4:04
Housing Lower SCN Assy	4:04		4:04
Panel FFC	4:28		4:28
Stand SC Assy	2:24		2:24
Stand SC Spring	3:09		3:09
Stand SC	3:16		3:16
Stand SC Lock	3:16		3:16
Cover Main Board	4:55		4:55
Cover CR Motor	4:55		4:55
Pin Porous Pad	2:08		2:08
Porous Pad PG Front	2:16	0:10	2:26
Wi-Fi Board	2:11		2:11
ASF Hopper Assy	3:01	2:46	5:47

Table 3-4. Standard Operation Time

Parts/Unit	Time		
	Replacement	Adjustment/ inspection	Total
Hopper Spring	3:11		3:11
RTD Roller Spring	3:26		3:26
RTD Roller Assy	3:48		3:48
Lever Paper Return	5:32		5:32
Adapter Assy (CL)	2:26		2:26
Adapter Assy (BK)	2:26		2:26
Holder Board	2:47		2:47
Print Head	3:48	16:43	20:31
Plate Tube Holder Starwheel	2:25		2:25
Sheet Guide Tube Support	3:35		3:35
Clamp Tube	3:43		3:43
Adapter Tube	6:09		6:09
Holder Starwheel Assy	7:05	0:25	7:30
Rear Paper Sensor Lever Spring	2:25		2:25
Rear Paper Sensor Lever	2:52		2:52
PE Sensor Lever Spring	2:36		2:36
Holder LD Assy	3:41		3:41
Sheet Stopper ASF	3:57		3:57
Holder LD	3:57		3:57
Rear Paper Sensor	4:06		4:06
Lever Detector PE Assy	4:41	1:36	6:17
Shaft LD Assy	4:47	2:46	7:33
ASF Roller Clutch Assy	5:03		5:03
Spure Gear Clutch 45.6	5:11		5:11
Extension Spring 0.137	5:25		5:25
Clutch	5:34		5:34
Holder Clutch	5:31		5:31
Cover Ink Eject	0:17		0:17
Porous Pad Assy	0:32	0:10	0:42

Table 3-4. Standard Operation Time

Parts/Unit	Time		
	Replacement	Adjustment/ inspection	Total
Porous Pad Ink Eject 1	0:39		0:39
Porous Pad Ink Eject 2	0:39		0:39
Porous Pad Ink Eject 3	0:39		0:39
Housing Ink Eject	0:39		0:39
Housing Right	1:31		1:31
Holder Housing Ink Eject	2:16		2:16
Holder Scale CR	2:19		2:19
Tube Guide	3:02		3:02
Key Slot Assy	4:22		4:22
Cover Tank	4:33		4:33
Housing Front Right	5:16		5:16
Tank Supply Ink Assy	5:59		5:59
Porous Pad Tank Upper	5:21		5:21
Ink System Assy	2:34		2:34
Porous Pad Ink Eject Lower	2:54		2:54
Lock CR	2:54		2:54
Extension Spring 0.8	2:54		2:54
Lever Change Assy	15:42		15:42
Combination Gear 36.8-15.6	15:50		15:50
Combination Gear18-28.8	15:51		15:51
ASF Combination Gear Shaft	15:56		15:56
Housing Left	3:13		3:13
PS Unit	4:44	2:57	7:41
CR Scale & Spring	4:41		4:41
PF Encoder FFC	3:23		3:23
PF Encoder	3:47		3:47
PF Scale	3:57		3:57
PF Grounding Spring	4:17		4:17
PF Motor Assy	5:08	0:17	5:25

Table 3-4. Standard Operation Time

Parts/Unit	Time		
	Replacement	Adjustment/ inspection	Total
Frame Main Support	3:51		3:51
Main Board	5:44	10:33	16:17
Cover Transistor	6:02		6:02
CR Driven Pulley & Spring	7:08		7:08
PGU Center Spring	9:42		9:42
PGU Center Assy	11:02	5:32	16:34
PGU Right Spring	9:42		9:42
PGU Right Assy	10:39	5:32	16:11
Main Frame Assy	9:29	6:26	15:55
CR Motor Assy	10:36	6:26	17:02
CR Unit	11:32		11:32
CR Belt	11:50		11:50
Head Grounding Plate	12:12		12:12
CR Encoder	12:03		12:03
Head FFC	13:04		13:04
FFC Holder	13:14		13:14
Head FFC	13:29		13:29
CR Encoder FFC	13:29		13:29
Main Frame	12:12		12:12
PGU Spring L / R	12:41		12:41
PGU Left Assy	14:24	5:32	19:56
EJ Roller Gear	9:40		9:40
EJ Roller Shaft	10:00	0:25	10:25
Combination Gear	10:12		10:12
Frame Base Assy	10:12		10:12
PF Roller Assy	10:40	0:42	11:22
Holder Core	10:34		10:34
Ferrite Core FFC	10:34		10:34
Square Nut	10:20		10:20

☐ ET-2400/ET-2810/ET-2860/L3250/L3270 Series/L3210/L3230 Series/ L3200 Series

Table 3-5. Standard Operation Time

Parts/Unit	Time		
	Replacement	Adjustment/ inspection	Total
Cover Front Assy	0:08		0:08
Cover ASF	0:08		0:08
Cap Tank	0:10		0:10
Hinge Cap Tank	0:15		0:15
Stacker Assy	0:12		0:12
Stacker Support	0:22		0:22
Stacker Main	0:22		0:22
Paper Support	0:16		0:16
Scanner Unit	2:03	2:32	4:35
Scanner Cover Assy	2:25		2:25
Document Mat	3:17		3:17
Scanner Cover	2:03		2:03
Housing Upper SCN Assy	4:04		4:04
Panel FFC	4:28		4:28
Panel Board	4:47		4:47
Housing Lower SCN Assy	4:04		4:04
Stand SC Assy	2:24		2:24
Stand SC Spring	3:09		3:09
Stand SC	3:16		3:16
Stand SC Lock	3:16		3:16
Cover Main Board	4:55		4:55
Cover CR Motor	4:55		4:55
Pin Porous Pad	2:08		2:08
Porous Pad PG Front	2:16	0:10	2:26
Wi-Fi Board*	2:11		2:11
ASF Hopper Assy	3:01	2:46	5:47
Hopper Spring	3:11		3:11

Table 3-5. Standard Operation Time

Parts/Unit	Time		
	Replacement	Adjustment/ inspection	Total
RTD Roller Spring	3:26		3:26
RTD Roller Assy	3:48		3:48
Lever Paper Return (w/ Spring)	5:32		5:32
Adapter Assy (CL)	2:40		2:40
Adapter Assy (BK)	2:40		2:40
Holder Board	3:01		3:01
Print Head	4:02	16:43	20:45
Plate Tube Holder Starwheel	2:25		2:25
Sheet Guide Tube Support	3:35		3:35
Clamp Tube	3:43		3:43
Adapter Tube	6:09		6:09
Holder Starwheel Assy	7:05	0:25	7:30
PE Sensor Lever Spring	2:36		2:36
Holder LD Assy	3:41		3:41
Sheet Stopper ASF	3:57		3:57
Holder LD	3:57		3:57
Lever Detector PE Assy	4:41	1:36	6:17
Shaft LD Assy	4:47	2:46	7:33
ASF Roller Clutch Assy	5:03		5:03
Spure Gear Clutch 45.6	5:11		5:11
Extension Spring 0.137	5:25		5:25
Clutch	5:34		5:34
Holder Clutch	5:31		5:31
Cover Ink Eject	0:17		0:17
Porous Pad Assy	0:32	0:10	0:42
Porous Pad Ink Eject 1	0:39		0:39
Porous Pad Ink Eject 2	0:39		0:39
Porous Pad Ink Eject 3	0:39		0:39
Housing Right	1:31		1:31

Table 3-5. Standard Operation Time

Parts/Unit	Time		
	Replacement	Adjustment/ inspection	Total
Holder Housing Ink Eject	2:16		2:16
Holder Scale CR	2:19		2:19
Tube Guide	3:02		3:02
Key Slot Assy	4:22		4:22
Cover Tank	4:33		4:33
Housing Front Right	5:16		5:16
Tank Supply Ink Assy	5:59		5:59
Porous Pad Tank Upper	5:21		5:21
Ink System Assy	2:34		2:34
Porous Pad Ink Eject Lower	2:54		2:54
Lock CR	2:54		2:54
Extension Spring 0.8	2:54		2:54
Lever Change Assy	15:42		15:42
Combination Gear 36.8-15.6	15:50		15:50
Combination Gear18-28.8	15:51		15:51
ASF Combination Gear Shaft	15:56		15:56
Housing Left	3:13		3:13
PS Unit	4:44	2:57	7:41
CR Scale & Spring	4:41		4:41
PF Encoder FFC	3:23		3:23
PF Encoder	3:47		3:47
PF Scale	3:57		3:57
PF Grounding Spring	4:17		4:17
PF Motor Assy	5:08	0:17	5:25
Frame Main Support	3:51		3:51
Main Board	5:44	10:33	16:17
Cover Transistor	6:02		6:02
CR Driven Pulley & Spring	7:08		7:08
Main Frame Assy	9:29	6:26	15:55

Table 3-5. Standard Operation Time

Parts/Unit	Time		
	Replacement	Adjustment/ inspection	Total
CR Motor Assy	10:36	6:36	17:12
CR Unit	11:32		11:32
CR Belt	11:50		11:50
Head Grounding Plate	12:12		12:12
CR Encoder	12:03		12:03
Head FFC	13:04		13:04
FFC Holder	13:14		13:14
Head FFC	13:29		13:29
CR Encoder FFC	13:29		13:29
Main Frame	12:12		12:12
PGU Center Spring	9:42		9:42
PGU Right Spring	10:49		10:49
PGU Right Assy	10:39	5:32	16:11
PGU Center Assy	11:02	5:32	16:34
PGU Left Spring L / R	12:41		12:41
PGU Left Assy	14:24	5:32	19:56
EJ Roller Gear	9:40		9:40
EJ Roller Shaft	10:00	0:25	10:25
Combination Gear	10:12		10:12
Frame Base Assy	10:12		10:12
PF Roller Assy	10:40	0:42	11:22
Holder Core	10:34		10:34
Square Nut	10:20		10:20

Note "*": ET-2400/ET-2810/ET-2860/L3250/L3270 Series Only

☐ L1210/L1230 Series/ET-1810/L1250/L1270 Series

Table 3-6. Standard Operation Time

Parts/Unit	Time		
	Replacement	Adjustment/ inspection	Total
Cover Front Assy	0:08		0:08
Cover ASF	0:08		0:08
Cap Tank	0:10		0:10
Hinge Cap Tank	0:15		0:15
Stacker Assy	0:12		0:12
Stacker Support	0:22		0:22
Stacker Main	0:22		0:22
Paper Support	0:16		0:16
Housing Upper Assy	1:32		1:32
Housing Panel	2:20		2:20
Panel FFC	2:44		2:44
Panal Board	3:03		3:03
Stand SC Assy	2:24		2:24
Stand SC Spring	3:09		3:09
Stand SC	3:16		3:16
Stand SC Lock	3:16		3:16
Cover Main Board	4:55		4:55
Cover CR Motor	4:55		4:55
Pin Porous Pad	1:37		1:37
Porous Pad PG Front	1:45	0:10	1:55
Wi-Fi Board*	2:11		2:11
ASF Hopper Assy	2:30	2:46	5:16
Hopper Spring	2:40		2:40
RTD Roller Spring	2:55		2:55
RTD Roller Assy	3:17		3:17
Lever Paper Return	5:01		5:01
Adapter Assy (CL)	2:35		2:35
Adapter Assy (BK)	2:35		2:35

Table 3-6. Standard Operation Time

Parts/Unit	Time		
	Replacement	Adjustment/ inspection	Total
Holder Board	2:56		2:56
Print Head	3:57	16:43	20:40
Plate Tube Holder Starwheel	1:54		1:54
Sheet Guide Tube Support	3:04		3:04
Clamp Tube	3:12		3:12
Adapter Tube	5:38		5:38
Holder Starwheel Assy	6:34	0:25	6:59
PE Sensor Lever Spring	2:05		2:05
Holder LD Assy	3:10		3:10
Sheet Stopper ASF	3:26		3:26
Holder LD	3:26		3:26
Lever Detector PE Assy	4:10	1:36	5:46
Shaft LD Assy	4:16	2:46	7:02
ASF Roller Clutch Assy	4:32		4:32
Spure Gear Clutch 45.6	4:40		4:40
Extension Spring 0.137	4:54		4:54
Clutch	5:03		5:03
Holder Clutch	5:00		5:00
Cover Ink Eject	0:17		0:17
Porous Pad Assy	0:32	0:10	0:42
Porous Pad Ink Eject 1	0:39		0:39
Porous Pad Ink Eject 2	0:39		0:39
Porous Pad Ink Eject 3	0:39		0:39
Housing Ink Eject	0:39		0:39
Housing Right	1:31		1:31
Holder Housing Ink Eject	2:16		2:16
Holder Scale CR	2:19		2:19
Tube Guide	3:02		3:02
Key Slot Assy	4:22		4:22

Table 3-6. Standard Operation Time

Parts/Unit	Time		
	Replacement	Adjustment/ inspection	Total
Cover Tank	4:33		4:33
Housing Front Right	5:16		5:16
Tank Supply Ink Assy	5:59		5:59
Porous Pad Tank Upper	5:21		5:21
Ink System Assy	2:34		2:34
Porous Pad Ink Eject Lower	2:54		2:54
Lock CR	2:54		2:54
Extension Spring 0.8	2:54		2:54
Lever Change Assy	15:11		15:11
Combination Gear 36.8-15.6	15:19		15:19
Combination Gear18-28.8	15:20		15:20
ASF Combination Gear Shaft	15:25		15:25
Housing Left	2:42		2:42
PS Unit	4:13	2:57	7:10
CR Scale & Spring	4:10		4:10
PF Encoder FFC	2:52		2:52
PF Encoder	3:16		3:16
PF Scale	3:26		3:26
PF Grounding Spring	3:46		3:46
PF Motor Assy	4:37	0:17	4:54
Frame Main Support	3:20		3:20
Main Board	5:13	10:33	15:46
Cover Transistor	5:31		5:31
CR Driven Pulley & Spring	6:37		6:37
PGU Center Spring	9:11		9:11
PGU Center Assy	10:31	5:32	16:03
PGU Right Spring	9:11		9:11
PGU Right Assy	10:08	5:32	15:40
Main Frame Assy	8:58	6:26	15:24

Table 3-6. Standard Operation Time

Parts/Unit	Time		
	Replacement	Adjustment/ inspection	Total
CR Motor Assy	10:05	6:26	16:31
CR Unit	11:01		11:01
CR Belt	11:19		11:19
Head Grounding Plate	11:41		11:41
CR Encoder	11:32		11:32
Head FFC	11:42		11:42
FFC Holder	11:57		11:57
Head FFC	11:57		11:57
CR Encoder FFC	13:29		13:29
Main Frame	11:41		11:41
PGU Spring L / R	12:10		12:10
PGU Left Assy	13:53	5:32	19:25
EJ Roller Gear	9:09		9:09
EJ Roller Shaft	9:29	0:25	9:54
Combination Gear	9:41		9:41
Frame Base Assy	9:41		9:41
PF Roller Assy	10:09	0:42	10:51
Holder Core	10:03		10:03
Square Nut	9:49		9:49

Note "*": ET-1810/L1250/L1270 Series Only

3.1.5 Checks and Precautions before Disassembling

3.1.5.1 Factors which Affect the Print Quality

WETTING OF VENTILATION FILM

The film under sealing film attached on the Ink Tank is breathable film. The air in the ink tank is released to outside through this film and then the air hole to keep ink supply to the Print Head stable. If the film gets wet with ink, the air in the tank is not properly released outside and may cause degradation in print quality.

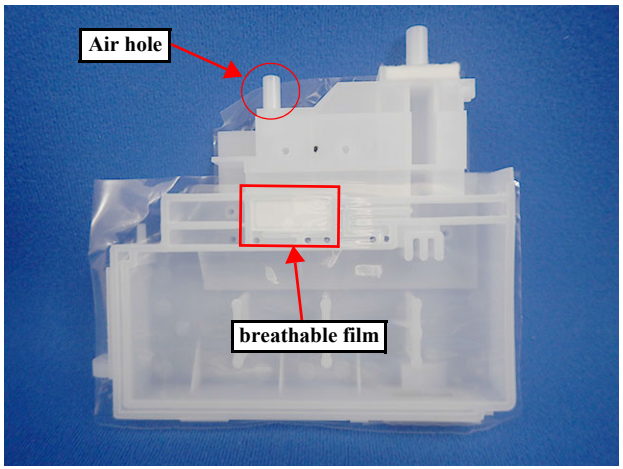
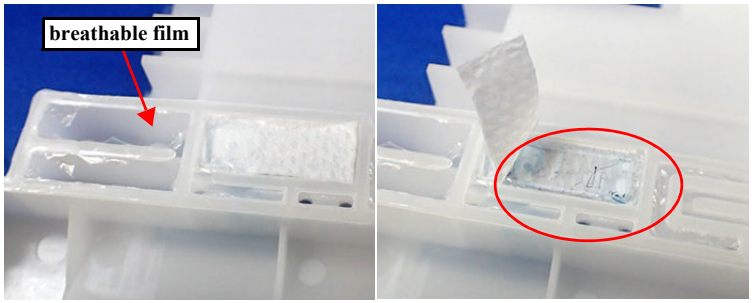


Figure 3-6. Breathable film/air hole

☐ Determining whether the breathable film is wet or not

ASSEMBLY

When the breathable film is wet, tank replacement is necessary. Because it is hard to notice that the film is wet just by visually checking its surface, determine that according to whether the ink has reached to a certain portion of the air chamber.



Hard to notice by seeing the surface **Cyan ink soiled**

When the ink has reached the red squared part of the air chamber shown below, breathable film is probably wet. In this case, replace the Ink Tank.

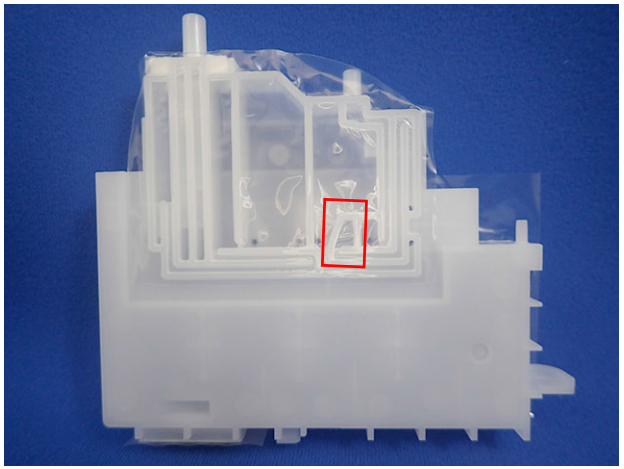


Figure 3-7. Wetting of breathable film

DIFFERENT TYPE OF INK MIXED IN INK TANK

From the specification of the CISS models, different type/color of ink may get mixed by mistaking the ink injection place. If there is a problem in printing result, the cause may be ink mixture, refer the following to handle the problem.

Mixture of different type/color of the ink is state as follows.

Different type: pigment black ink and dye color ink mixed

- **The head nozzles may get clogged with solidified ink particles.**

Different color: dye color inks mixed.

- **A print quality problem will occur, but ink solidification will not occur.**

It is recommended to remove the Porous Pad Assy when performing the ink tube refresh because it consumes a lot of ink.

The powerful cleaning in the adjustment program corresponds to the ink tube refresh. Select "not to count up the waste ink counter" to prevent a mismatch between the program's waste ink counter and the counter of the user's Porous Pad Assy.*

Note "*": If you do not select the option, the waste ink counter will count up during the ink tube refresh.

☐ How to deal with mixture of different type/color ink

When the ink got mixed, it is necessary to clean the CISS mechanism (from the Ink Tank to the Adapter).

There are the following two methods.

- **Replace the CISS mechanism**

1. Replace the CISS mechanism
2. Remove the user's Maintenance Box/Porous Pad Assy and attach the Porous Pad for jigs.
3. To clean the head, inject CR02 into the tank.
4. Start "head cleaning" or "ink refill", select "not to count up the waste ink counter", then perform the ink tube refresh.
5. After each ink tube refresh, print a page to see if a blank page is printed (printed only with CR02). Repeat ink tube refresh until you get a blank page print.
6. Eject CR02 from the Ink Tank and fill the tank with new ink.
7. Perform the ink tube refresh again, and then check that the print quality has been recovered.

- **Cleaning inside the ink path (reusing the CISS mechanism)**

1. Eject the ink inside the Ink Tank/ink tube.
2. Inject CR02 into the Tank to clean the head and the CISS mechanism.
3. Start the adjustment program, select "not to count up the waste ink counter", then repeat ink tube cleaning.
4. Start "head cleaning" or "ink refill", select "not to count up the waste ink counter", then repeat the ink tube refresh.
5. Eject CR02 from the Ink Tank and fill the tank with new ink.
6. Perform the ink tube refresh again, and then check that the print quality has been recovered.

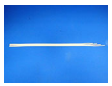
3.1.5.2 Minimizing Ink Leakage during Disassembly for Your Safety

Ink leakage may occur when removing ink-related parts from the printer. This section describes the parts that may cause ink leakage and how to prevent or minimize the leakage.

CAUTION

When the printer get soiled by the ink leakage, wipe the ink with a cloth wet with CR02. Do not use ethanol to the parts that touch the ink such as tube connecting part and adapter.

THE PARTS THAT MAY CAUSE INK LEAKAGE WHEN REMOVING

Parts name*	When ink leakage may occur	Location
Tank Supply Ink Assy	Removing the Adapter Tube from the Tank Supply Ink Assy.	A
Adapter Assy	Removing the Adapter Tube from the Adapter Assy.	B
 Adapter tube	• Removing the Adapter Tube from the Tank Supply Ink Assy. • Removing the Adapter Tube from the Adapter Assy.	A, B

Note "*": These parts are indicated with the icon in disassembly/reassembly flowchart. (see " 3.3.2 Disassembly Flowchart (p92)")

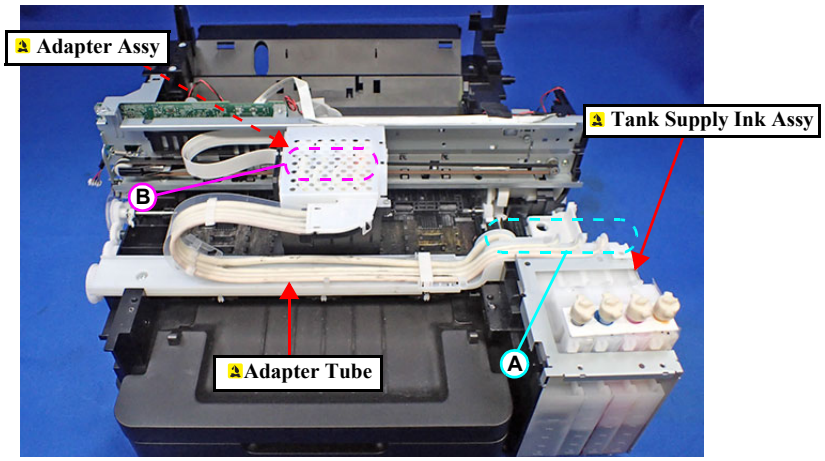


Figure 3-8. The Parts That May Cause Ink Leakage

HOW TO MINIMIZE THE INK LEAKAGE

Before disassembling, check the following methods.

☐ Removing the Adapter Assy from the CR Unit

Before disconnecting the joint parts of the ink path, make sure to remove the Adapter Assy from the CR Unit.

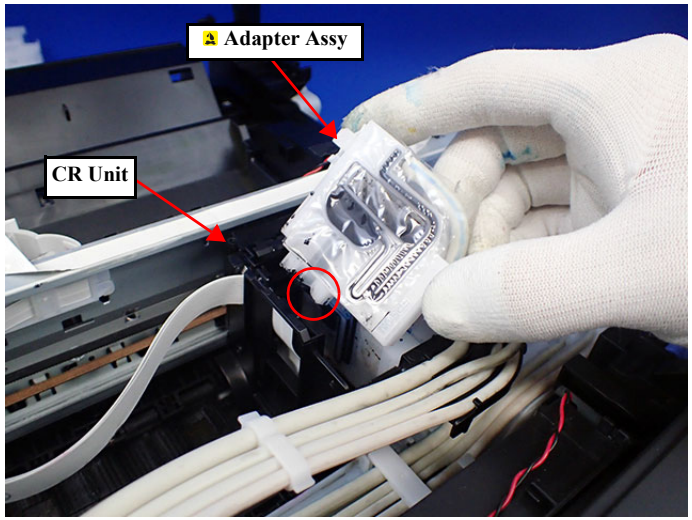


Figure 3-9. Ink leakage from adapter

☐ Disconnecting the Adapter Assy and the Adapter Tube

Be careful not to press the film portion of the Adapter Assy since doing so may cause ink to leak. Hold the Adapter Assy by its plastic portion when disconnecting the Adapter Tube.

In addition, before disconnecting the tube, pinch it with the tube clip and cover the tube end with a cloth to minimize ink leakage.

☐ Tools needed

- Tube clip
- Cloth

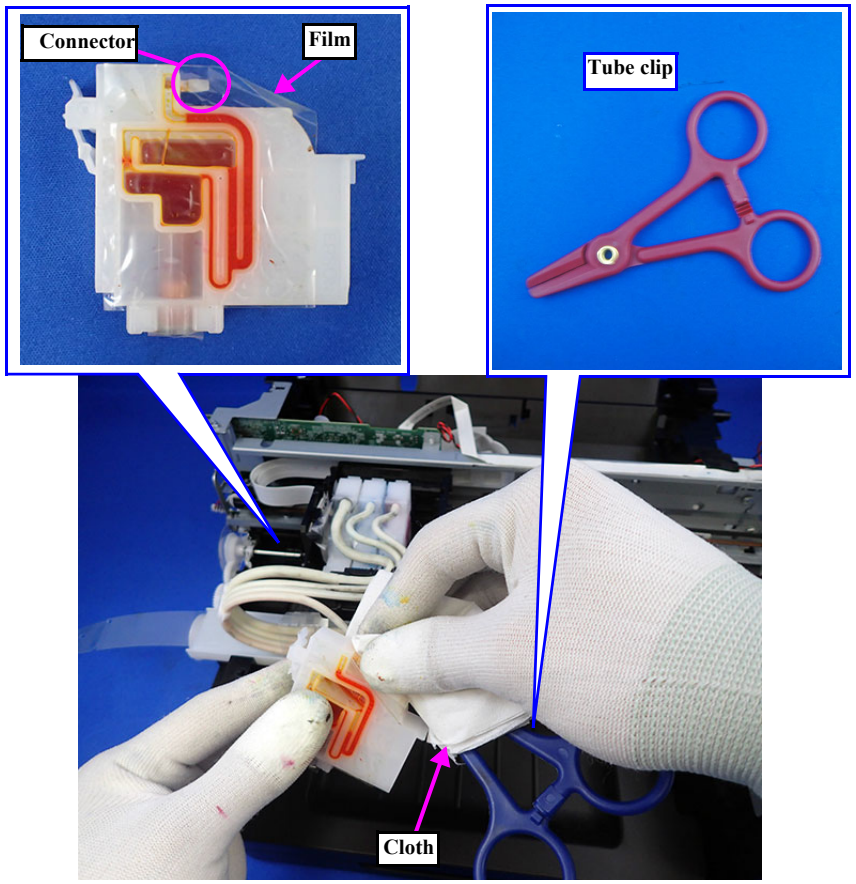


Figure 3-10. Disconnecting Adapter Assy and Adapter Tube (1)

When removing the Adapter Tube from the Adapter Assy in the procedure given below, ink may leak from the Adapter Tube. Perform disconnection off the printer and be careful not to soil printer and things around.

1. Pinch the Adapter Tube with a tube clip and remove it from the Adapter Assy.
2. To prevent ink leakage, plug a cotton swab into the tip of the Adapter Tube.
3. Remove the tube clip from the Adapter Tube.
4. Repeat Step 1 to Step 3 until all four Adapter Tubes are removed.

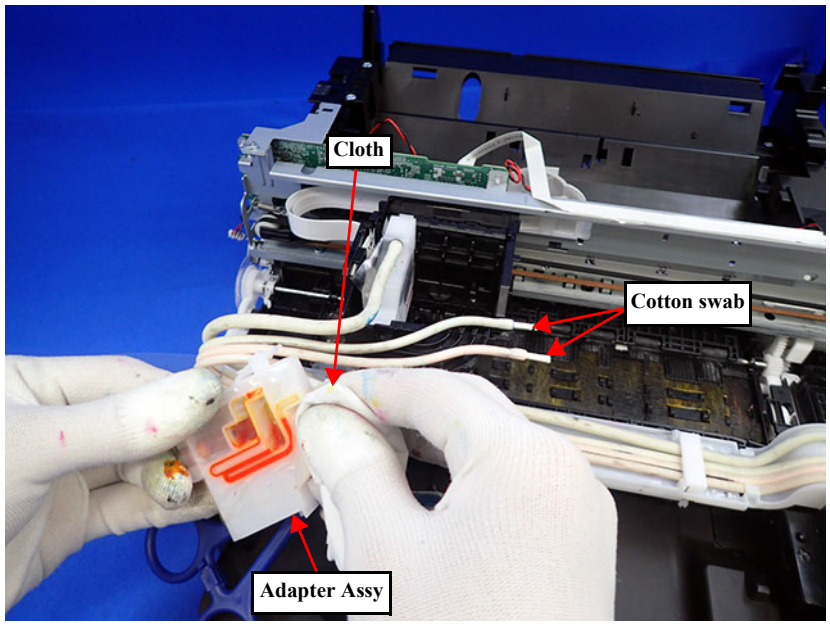


Figure 3-11. Disconnecting Adapter Assy and Adapter Tube (2)

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3.1.5.3 Ink Discharging Procedure

Before removing the Tank Supply Ink Assy, discharge the ink in the procedure given below if necessary.

1. Disconnect the adapter from the Print Head. (p 86)
2. Connect any syringe (standard: tip of the syringe = Φ3.2mm, capacity = 50 mL) to the disconnected Adapter Assy.
3. Open the Cap Hinge Tank.

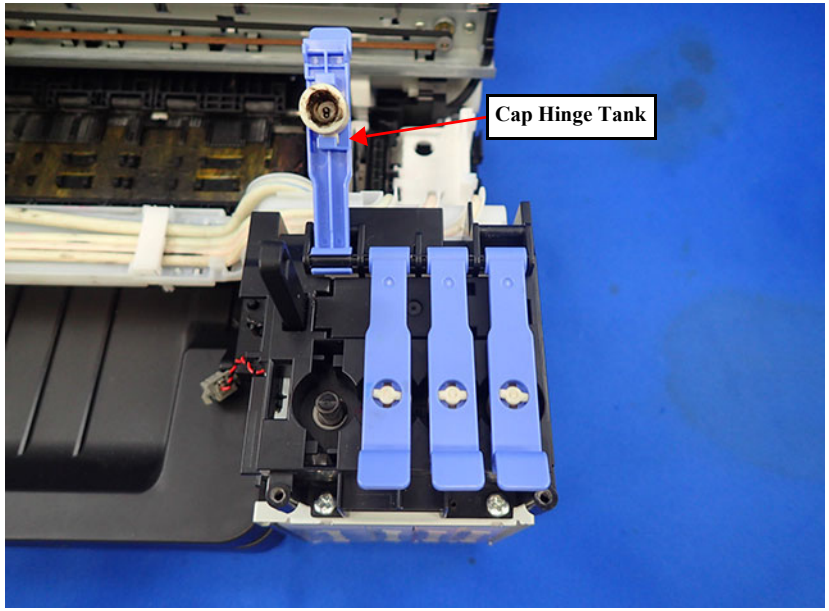


Figure 3-12. Ink discharging (1)

4. Suck out the ink inside the Tank Supply Ink Assy with the connected syringe.

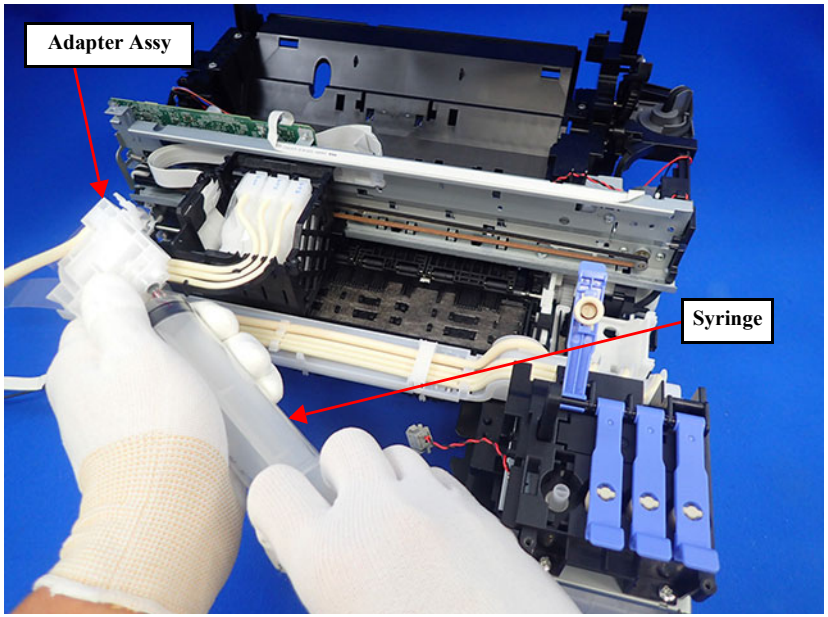


Figure 3-13. Ink discharging (2)

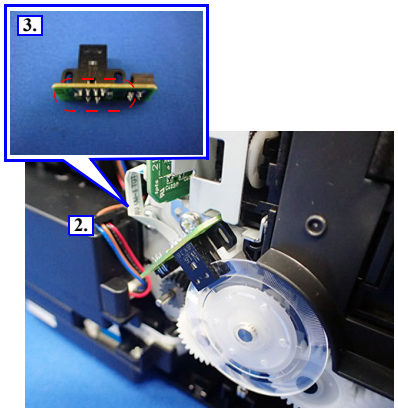
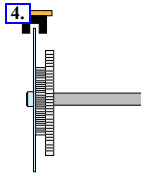
5. Repeat Step 1 to Step 4 for each color.

3.2 Common Cautions on Disassembly/Reassembly

This section describes common cautions when disassembling/reassembling the product.

Before disassembling/reassembling a printer including this product, be sure to read Safety Precautions(P3) and this section.

Item	Content	Photo/Illustration
When handling parts	1. When handling new parts for replacement, take care not to contaminate or damage them. 2. Take care not to damage the FFCs/cables/Ink tube if there is a possibility of coming into contact with them. 3. When reassembling the product, take care not to let components of the unit come off.	Scanner Unit Main Frame Assy
When reassembling	Take care not to damage them when securing them by tightening screws.	Main Board Holder Core
When applying grease	Do not lubricate any part other than those specified. If grease is applied on such a part, wipe it off completely.	---
External parts	Confirm visually that there are no scratches, dirt, and gaps.	---
Moving parts	After reassembling, confirm that there are no abnormal noises and they work smoothly.	---

Item	Content	Photo/Illustration
Timing belts	1. Take care not to break them. 2. Confirm that it is installed properly onto the transmissive sections of the pinion gear/ driven roller.	
Motors	Take care not to damage the pinion gears.	---
Sensors	1. Take care not to touch the detector sections. 2. As for the encoder Sensor used with a circular scale, the photo sensor section should be set over the encoded area of the circular scale. 3. Take care not to get injured by the sharp ends of the board terminal on the back of the circuit boards when handling the sensors or the peripheral parts.	
Scales	1. Take care not to touch the encoded area. 2. Install it with the black section up. (CR Scale only) 3. Wipe the scale with ethanol before installing. (CR Scale only) 4. Confirm that they do not touch the photo sensors after installation.	 

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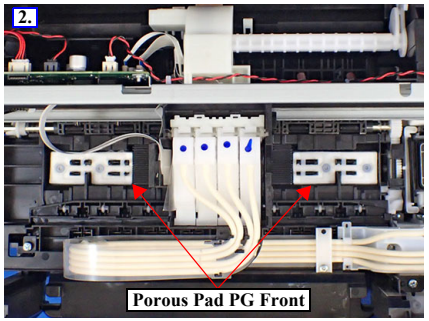
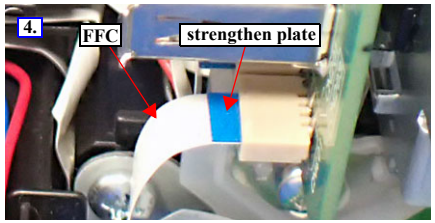
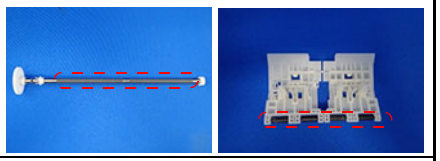
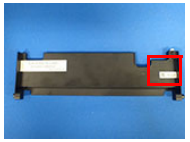
Item	Content	Photo/Illustration
Waste ink pads	1. Take care not to stain your hands with the waste ink soaked in the ink pads. If ink comes into contact with your hands, wash it off with water immediately. 2. Take care not to stain the printer's parts with the waste ink soaked in the ink pads. If ink comes into contact with the parts, wash it off. (Especially, pay attention to Porous Pad PG Front)	
FFCs	1. Be sure to insert them to their connectors on the boards as far as they will go without any loose connection such as a half-way or slant connection. 2. Route them along their routing paths. 3. If the double-sided tape that secures the FFCs is not strong enough to secure them, make sure to replace the tape and secure the FFCs firmly. 4. When connecting to the connector, be careful not to break the strengthen plate on the backside of the terminal of the FFC.	
Gears	When installing gears, pay attention to the following: • The gear section should not be damaged. • No foreign material is attached. • No grease is attached on any parts other than those specified.	---

Item	Content	Photo/Illustration
Paper feed rollers	Do not touch rollers for paper feeding when handling them.	
One Time parts	After removing One Time parts specified in this manual, do not reuse them, but be sure to replace them with new ones.	One Time icon:
Ink System	1. Take care not to stain your hands with ink. 2. When you connect the ink tube to another part, insert the ink tube up to the root of the joint to prevent ink leakage and secure the tube with the tube clamp. 3. If it's hard to insert the ink tube to the joint, apply CR02 to the inserting part of the ink tube.	---
MAC Address Label	1. Take care not to stain or damage it. 2. When replacing the printer mechanism, make sure to install the existing Main Board and the part with the MAC address label (Cover Front Assy) to the new printer mechanism.	Cover Front Assy ET-4800/L5290/L5310 Series ET-2800/ET-2820/ET-  ET-2400/ET-2810/ET-2860/L3250/L3270 Series/L3200 Series/ L3210/L3230 Series/ L1210/L1230 Series/

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3.3 Disassembly/Reassembly Procedures

3.3.1 Functional differences between models and component parts

The products described in this manual employ the same printer mechanism, however, because of the functional differences, there are some structural differences between them.

The table below describes the differences.

Table 3-7. Function List According to Models

Function		ET-4800/L5290/ L5310 Series	ET-2800/ET-2820/ ET-2870/ET-2870U/ L3260/L3280 Series	ET-2400/ET-2810/ET-2860/ L3250/L3270 Series	L3210/L3230 Series	L3200 Series	L1210/L1230 Series	ET-1810/ L1250/L1270 Series
Product Category		MFP(4in1)	MFP(3in1)				SFP	
Number of Colors		4						
Print Head		F2						
Paper Size		4 x 6 to A4/LTR, Legal						
ASF	Front (Cassette)	N/A						
	Rear	Yes						
Double-Sided Printing		N/A						
Scanner		CIS					N/A	
Panel	Monitor Size	1.44		N/A				
	Sensor Type	Hard Key						
Wi-Fi		Yes (802.11b/g/n)			N/A			Yes (802.11b/g/n)
Ethernet		Yes	N/A					
ADF		Yes	N/A					
Disassembly Flowchart Start Position		P.98		P.93			P.104	

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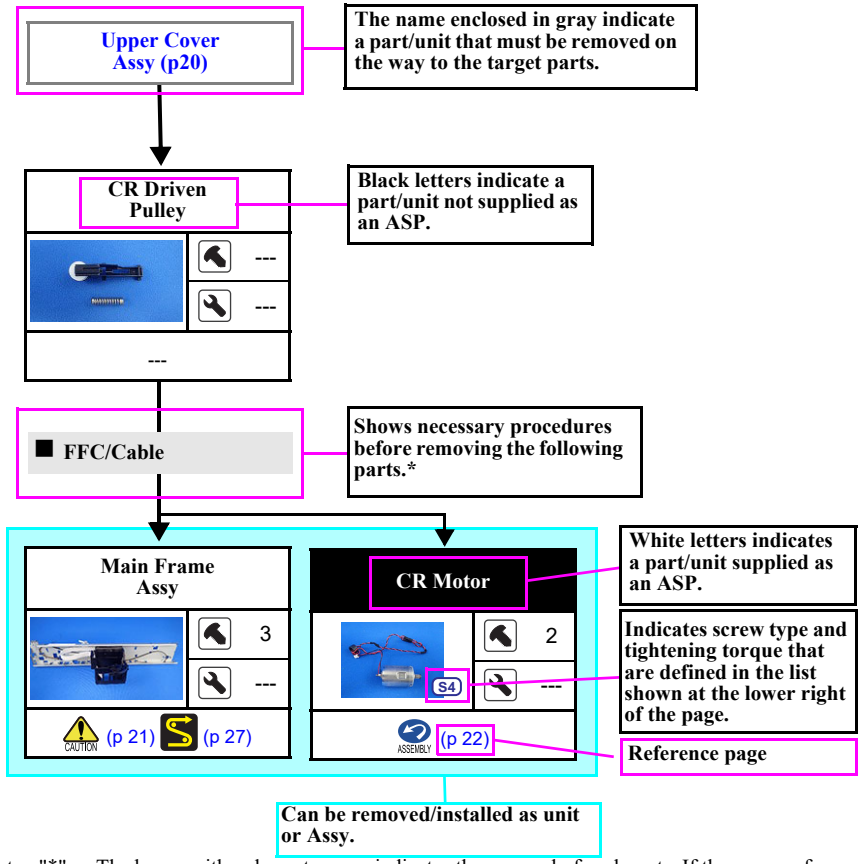
3.3.2 Disassembly Flowchart

This section describes procedures for disassembling the parts/units in a flowchart format. For some parts/units, detailed procedures or precautions are provided (accordingly indicated by icons and cell's color). Refer to the explanations in the example chart below and perform an appropriate disassembling and assembling procedure. (see "3.3.3 Repairing Major Components Disassembly/Assembly Procedure" (p109) and "3.4 Detailed Disassembly/Reassembly Procedure for each Part/Unit" (p134)) For routing cables, see "3.4 Routing FFCs/cables" (p137)

CHECK

The example below shows how to see the charts on the following pages.


Upper Cover Assy (p20)
The name enclosed in gray indicate a part/unit that must be removed on the way to the target parts.
CR Driven Pulley
Black letters indicate a part/unit not supplied as an ASP.

FFC/Cable
Shows necessary procedures before removing the following parts.*
Main Frame Assy
CR Motor
White letters indicates a part/unit supplied as an ASP.
3

2
S4

(p 21)
(p 27)
(p 22)
Indicates screw type and tightening torque that are defined in the list shown at the lower right of the page.
Reference page
Can be removed/installed as unit or Assy.

Note "*": The boxes with only part names indicates the removal of such parts. If the names of FFCs or cables are shown, disconnect the FFCs or cables from their connectors.

Item		Description	Reference
Parts/unit name	White-letter	Part/unit supplied as an ASP	---
	Black-letter	Part/unit not supplied as an ASP	---
Icon	WARNING	Indicates a practice or condition that could result in injury or loss of life if not strictly observed.	Indicates the reference page in blue-letter
	CAUTION	Indicates a practice or condition that could result in damage to, or destruction of equipment if not strictly observed.	Indicates the reference page in blue-letter
		Indicates the parts that are inevitably broken in the disassembling procedure, and should be replaced with a new one for reassembly.	---
	CHECK	Indicates necessary check items in the disassembling/assembling procedure.	Indicates the reference page in blue-letter
	TOOL	Indicates supplementary explanation for disassembly is given.	Indicates the reference page in blue-letter
	ASSEMBLY	Indicates particular tasks to keep quality of the units are required.	Indicates the reference page in blue-letter
		Indicates particular routing of cables is required.	Indicates the reference page in blue-letter
	ADJUSTMENT	Indicates particular adjustment(s) is/are required.	Chapter 4 " Adjustment (p140)"
	LUBRICATION	Indicates lubrication is required.	Chapter 5 " Maintenance (p155)"
		Indicates the number of screws securing the parts/units.	---
		Indicates the points secured with other than a screw such as a hook, rib, dowel or the like.	---

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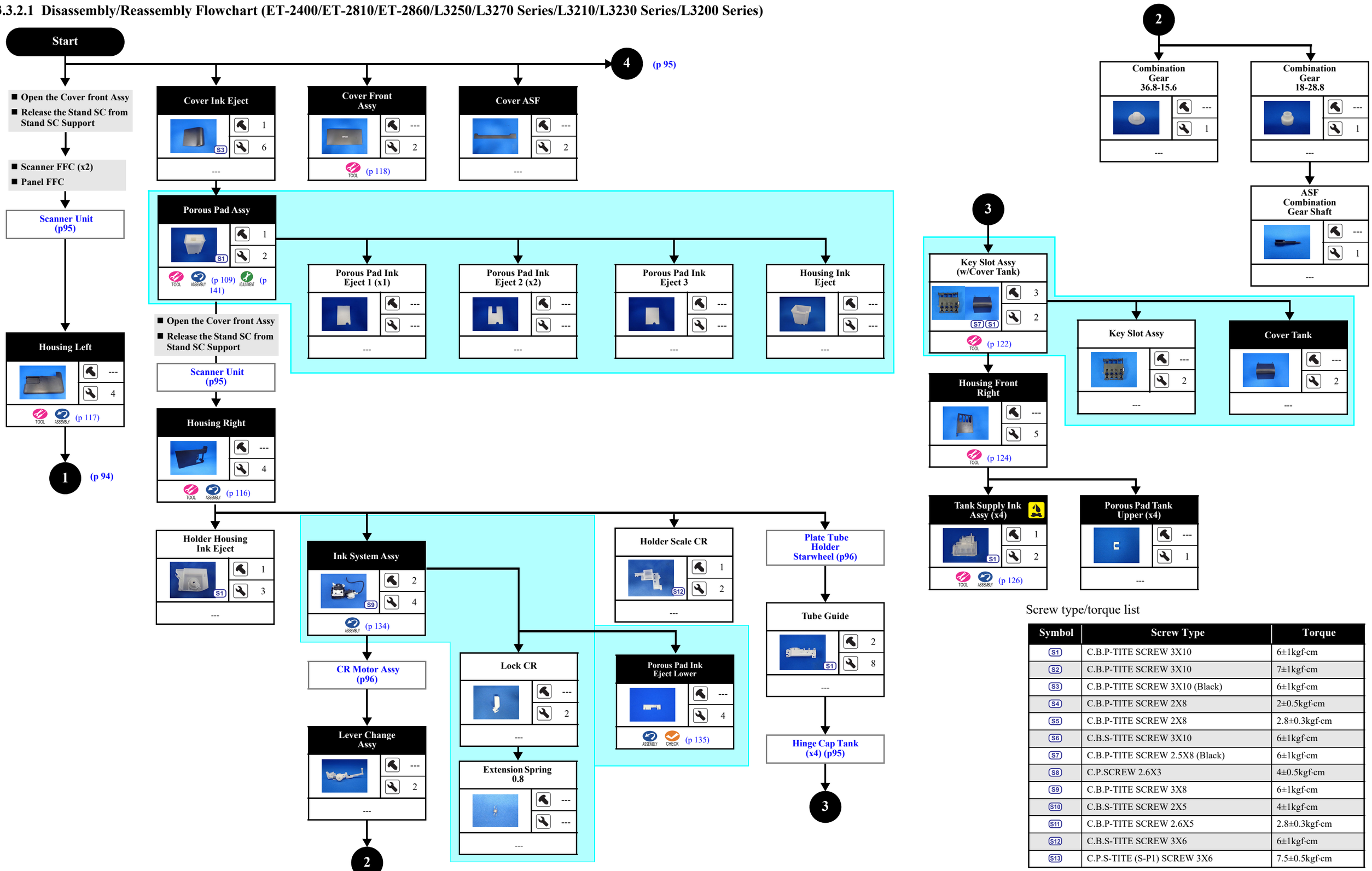
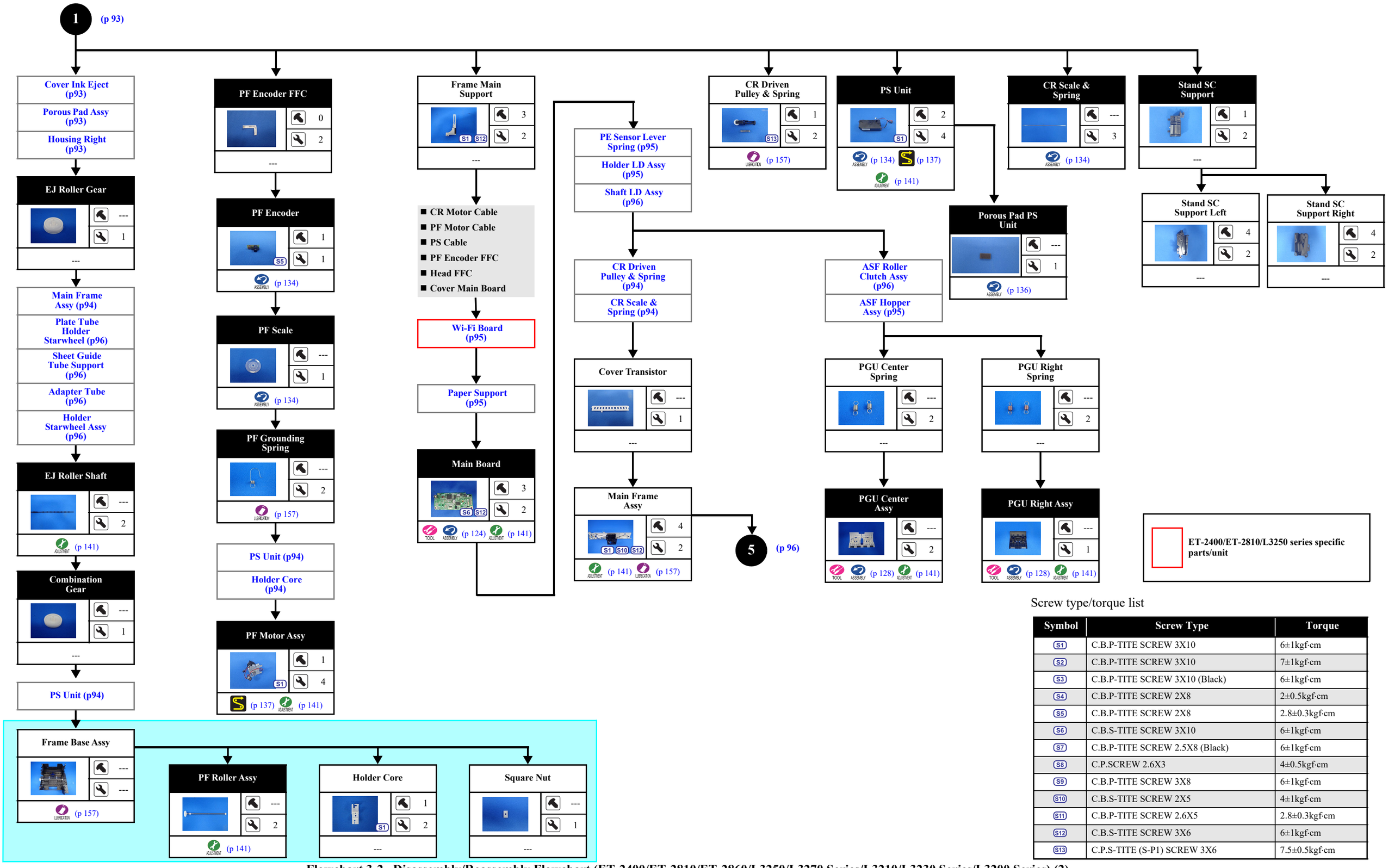
3.3.2.1 Disassembly/Reassembly Flowchart (ET-2400/ET-2810/ET-2860/L3250/L3270 Series/L3210/L3230 Series/L3200 Series)



Flowchart 3-1. Disassembly/Reassembly Flowchart (ET-2400/ET-2810/ET-2860/L3250/L3270 Series/L3210/L3230 Series/L3200 Series) (1)

Screw type/torque list

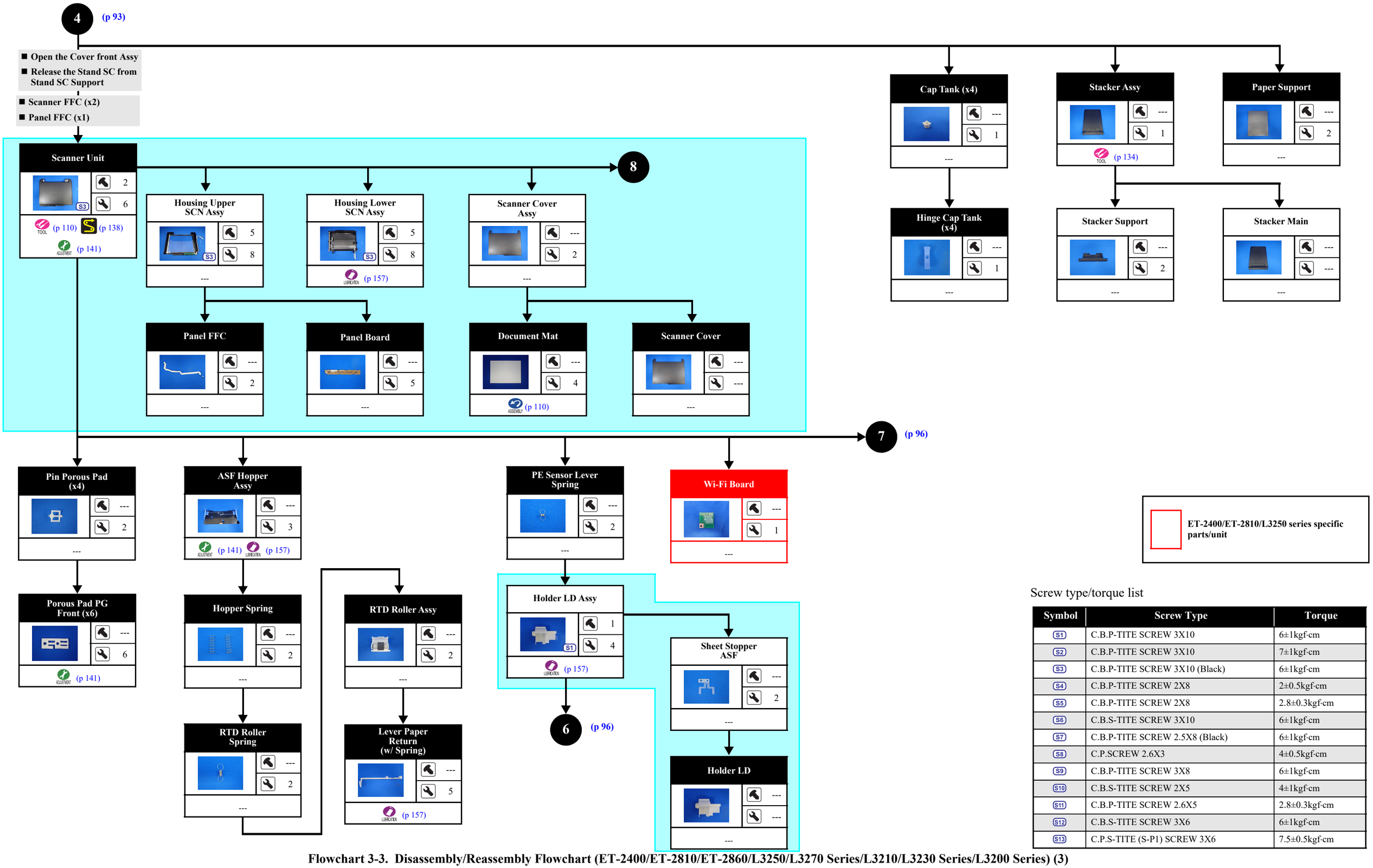
Symbol	Screw Type	Torque
S1	C.B.P-TITE SCREW 3X10	6±1kgf·cm
S2	C.B.P-TITE SCREW 3X10	7±1kgf·cm
S3	C.B.P-TITE SCREW 3X10 (Black)	6±1kgf·cm
S4	C.B.P-TITE SCREW 2X8	2±0.5kgf·cm
S5	C.B.P-TITE SCREW 2X8	2.8±0.3kgf·cm
S6	C.B.S-TITE SCREW 3X10	6±1kgf·cm
S7	C.B.P-TITE SCREW 2.5X8 (Black)	6±1kgf·cm
S8	C.P.SCREW 2.6X3	4±0.5kgf·cm
S9	C.B.P-TITE SCREW 3X8	6±1kgf·cm
S10	C.B.S-TITE SCREW 2X5	4±1kgf·cm
S11	C.B.P-TITE SCREW 2.6X5	2.8±0.3kgf·cm
S12	C.B.S-TITE SCREW 3X6	6±1kgf·cm
S13	C.P.S-TITE (S-P1) SCREW 3X6	7.5±0.5kgf·cm



Screw type/torque list

Symbol	Screw Type	Torque
S1	C.B.P-TITE SCREW 3X10	6±1kgf·cm
S2	C.B.P-TITE SCREW 3X10	7±1kgf·cm
S3	C.B.P-TITE SCREW 3X10 (Black)	6±1kgf·cm
S4	C.B.P-TITE SCREW 2X8	2±0.5kgf·cm
S5	C.B.P-TITE SCREW 2X8	2.8±0.3kgf·cm
S6	C.B.S-TITE SCREW 3X10	6±1kgf·cm
S7	C.B.P-TITE SCREW 2.5X8 (Black)	6±1kgf·cm
S8	C.P.SCREW 2.6X3	4±0.5kgf·cm
S9	C.B.P-TITE SCREW 3X8	6±1kgf·cm
S10	C.B.S-TITE SCREW 2X5	4±1kgf·cm
S11	C.B.P-TITE SCREW 2.6X5	2.8±0.3kgf·cm
S12	C.B.S-TITE SCREW 3X6	6±1kgf·cm
S13	C.P.S-TITE (S-P1) SCREW 3X6	7.5±0.5kgf·cm

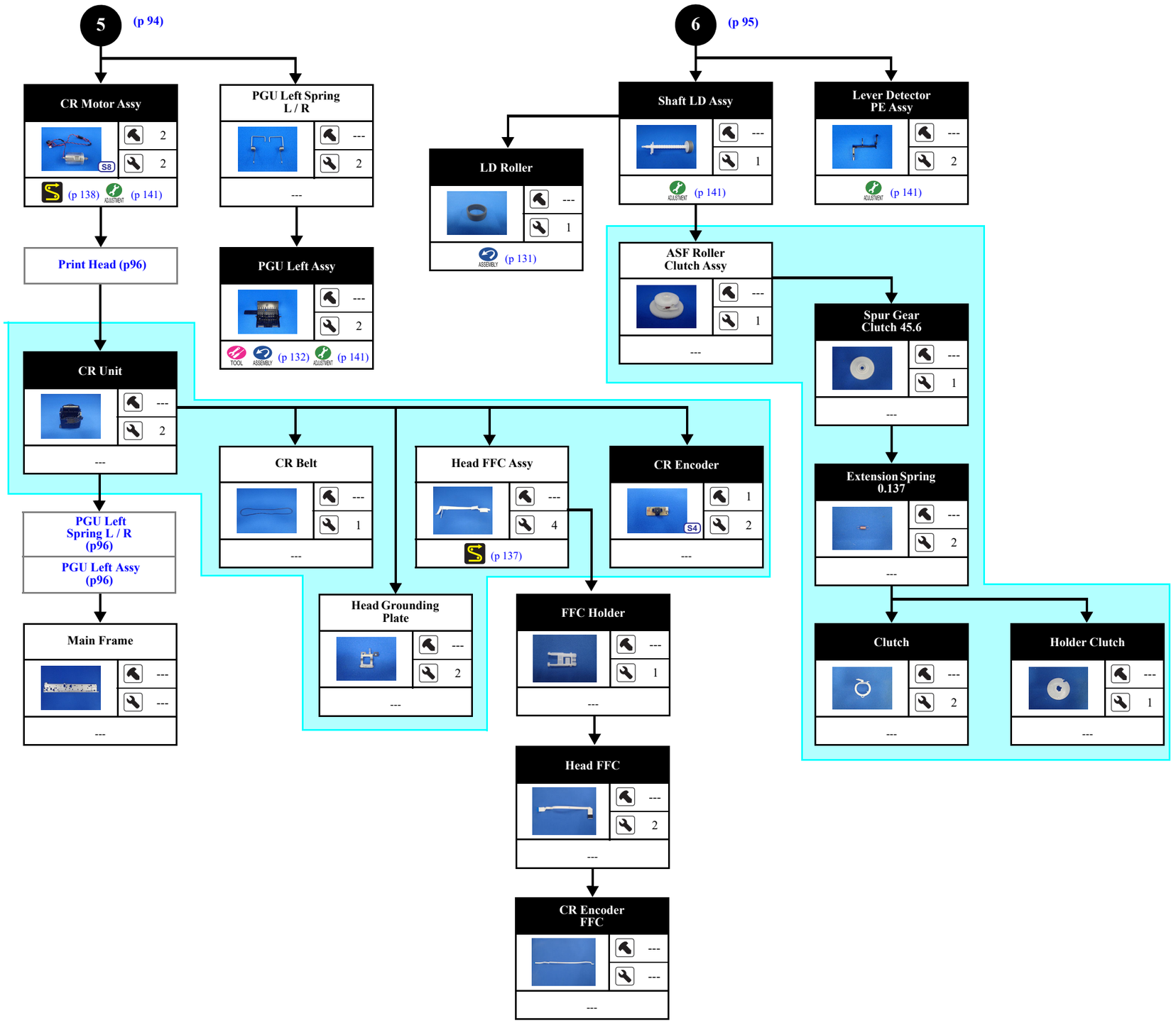
Flowchart 3-2. Disassembly/Reassembly Flowchart (ET-2400/ET-2810/ET-2860/L3250/L3270 Series/L3210/L3230 Series/L3200 Series) (2)



Screw type/torque list

Symbol	Screw Type	Torque
S1	C.B.P-TITE SCREW 3X10	6±1kgf·cm
S2	C.B.P-TITE SCREW 3X10	7±1kgf·cm
S3	C.B.P-TITE SCREW 3X10 (Black)	6±1kgf·cm
S4	C.B.P-TITE SCREW 2X8	2±0.5kgf·cm
S5	C.B.P-TITE SCREW 2X8	2.8±0.3kgf·cm
S6	C.B.S-TITE SCREW 3X10	6±1kgf·cm
S7	C.B.P-TITE SCREW 2.5X8 (Black)	6±1kgf·cm
S8	C.P.SCREW 2.6X3	4±0.5kgf·cm
S9	C.B.P-TITE SCREW 3X8	6±1kgf·cm
S10	C.B.S-TITE SCREW 2X5	4±1kgf·cm
S11	C.B.P-TITE SCREW 2.6X5	2.8±0.3kgf·cm
S12	C.B.S-TITE SCREW 3X6	6±1kgf·cm
S13	C.P.S-TITE (S-P1) SCREW 3X6	7.5±0.5kgf·cm

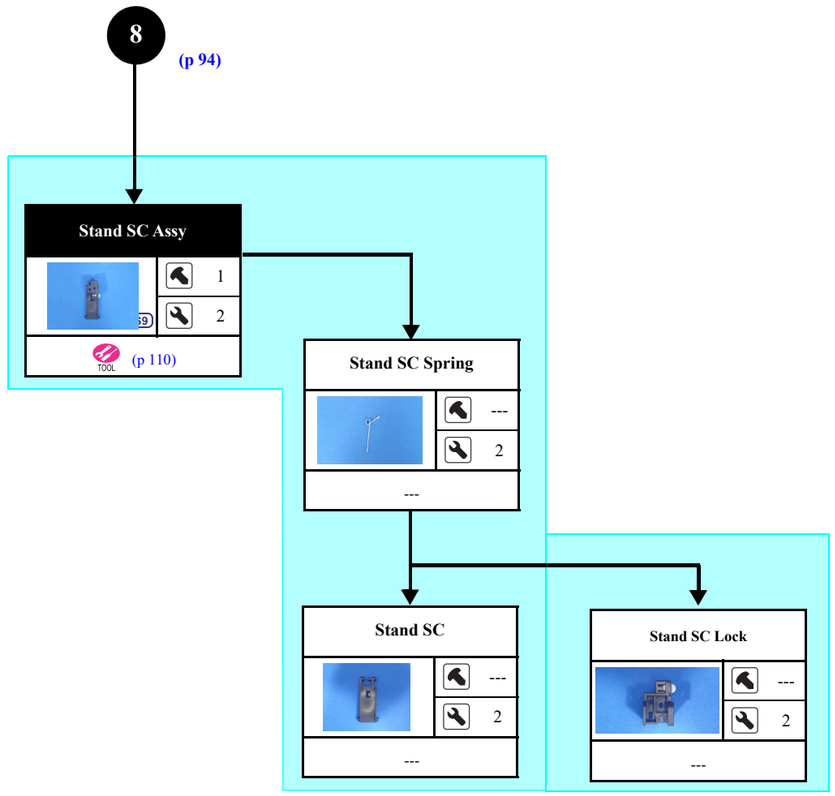
Flowchart 3-3. Disassembly/Reassembly Flowchart (ET-2400/ET-2810/ET-2860/L3250/L3270 Series/L3210/L3230 Series/L3200 Series) (3)

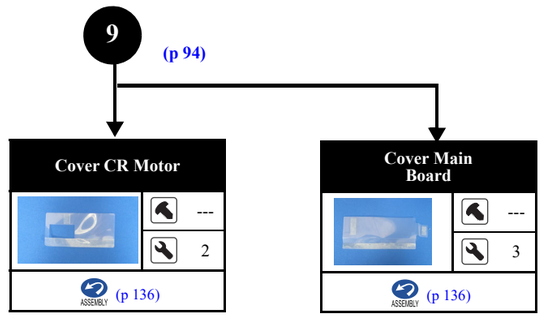


Screw type/torque list

Symbol	Screw Type	Torque
S1	C.B.P-TITE SCREW 3X10	6±1kgf·cm
S2	C.B.P-TITE SCREW 3X10	7±1kgf·cm
S3	C.B.P-TITE SCREW 3X10 (Black)	6±1kgf·cm
S4	C.B.P-TITE SCREW 2X8	2±0.5kgf·cm
S5	C.B.P-TITE SCREW 2X8	2.8±0.3kgf·cm
S6	C.B.S-TITE SCREW 3X10	6±1kgf·cm
S7	C.B.P-TITE SCREW 2.5X8 (Black)	6±1kgf·cm
S8	C.P.SCREW 2.6X3	4±0.5kgf·cm
S9	C.B.P-TITE SCREW 3X8	6±1kgf·cm
S10	C.B.S-TITE SCREW 2X5	4±1kgf·cm
S11	C.B.P-TITE SCREW 2.6X5	2.8±0.3kgf·cm
S12	C.B.S-TITE SCREW 3X6	6±1kgf·cm
S13	C.P.S-TITE (S-P1) SCREW 3X6	7.5±0.5kgf·cm

Flowchart 3-4. Disassembly/Reassembly Flowchart (ET-2400/ET-2810/ET-2860/L3250/L3270 Series/L3210/L3230 Series/L3200 Series) (4)



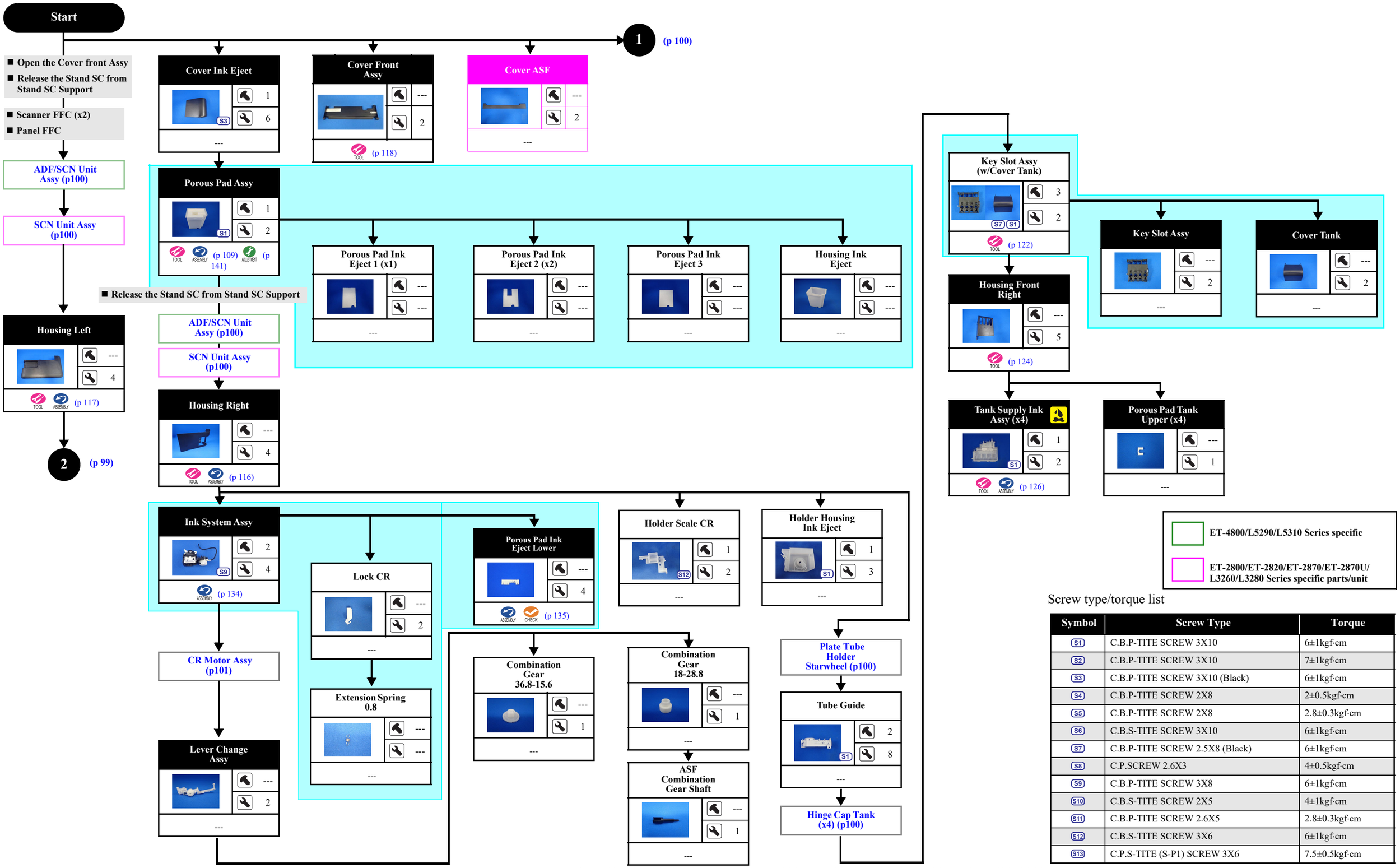


Screw type/torque list

Symbol	Screw Type	Torque
S1	C.B.P-TITE SCREW 3X10	6±1kgf·cm
S2	C.B.P-TITE SCREW 3X10	7±1kgf·cm
S3	C.B.P-TITE SCREW 3X10 (Black)	6±1kgf·cm
S4	C.B.P-TITE SCREW 2X8	2±0.5kgf·cm
S5	C.B.P-TITE SCREW 2X8	2.8±0.3kgf·cm
S6	C.B.S-TITE SCREW 3X10	6±1kgf·cm
S7	C.B.P-TITE SCREW 2.5X8 (Black)	6±1kgf·cm
S8	C.P.SCREW 2.6X3	4±0.5kgf·cm
S9	C.B.P-TITE SCREW 3X8	6±1kgf·cm
S10	C.B.S-TITE SCREW 2X5	4±1kgf·cm
S11	C.B.P-TITE SCREW 2.6X5	2.8±0.3kgf·cm
S12	C.B.S-TITE SCREW 3X6	6±1kgf·cm
S13	C.P.S-TITE (S-P1) SCREW 3X6	7.5±0.5kgf·cm

Flowchart 0-1. Disassembly/Reassembly Flowchart (ET-2400/ET-2810/ET-2860/L3250/L3270 Series/L3210/L3230 Series/L3200 Series) (5)

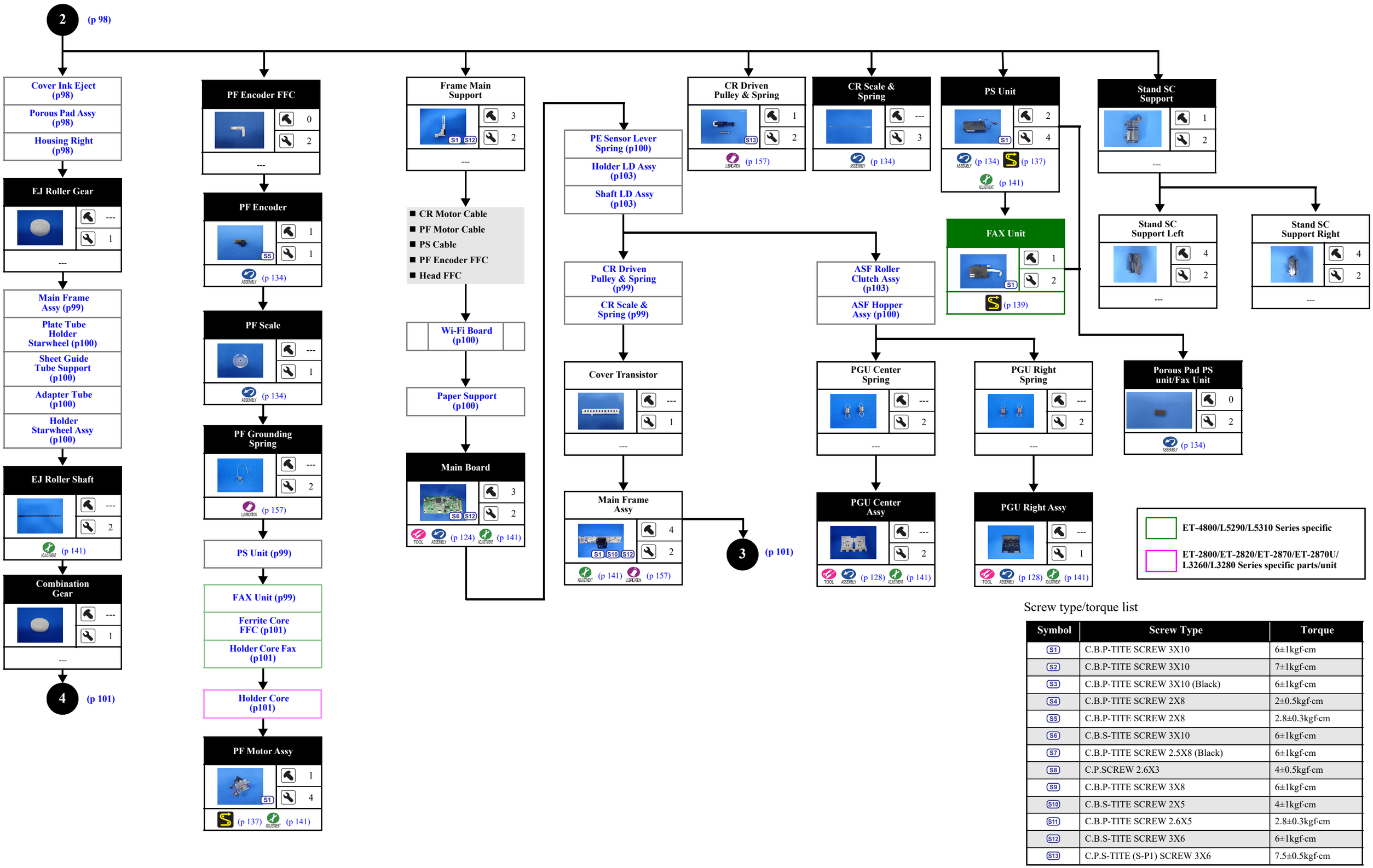
3.3.2.2 Disassembly/Reassembly Flowchart (ET-4800/L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series)



Screw type/torque list

Symbol	Screw Type	Torque
S1	C.B.P-TITE SCREW 3X10	6±1kgf·cm
S2	C.B.P-TITE SCREW 3X10	7±1kgf·cm
S3	C.B.P-TITE SCREW 3X10 (Black)	6±1kgf·cm
S4	C.B.P-TITE SCREW 2X8	2±0.5kgf·cm
S5	C.B.P-TITE SCREW 2X8	2.8±0.3kgf·cm
S6	C.B.S-TITE SCREW 3X10	6±1kgf·cm
S7	C.B.P-TITE SCREW 2.5X8 (Black)	6±1kgf·cm
S8	C.P.SCREW 2.6X3	4±0.5kgf·cm
S9	C.B.P-TITE SCREW 3X8	6±1kgf·cm
S10	C.B.S-TITE SCREW 2X5	4±1kgf·cm
S11	C.B.P-TITE SCREW 2.6X5	2.8±0.3kgf·cm
S12	C.B.S-TITE SCREW 3X6	6±1kgf·cm
S13	C.P.S-TITE (S-P1) SCREW 3X6	7.5±0.5kgf·cm

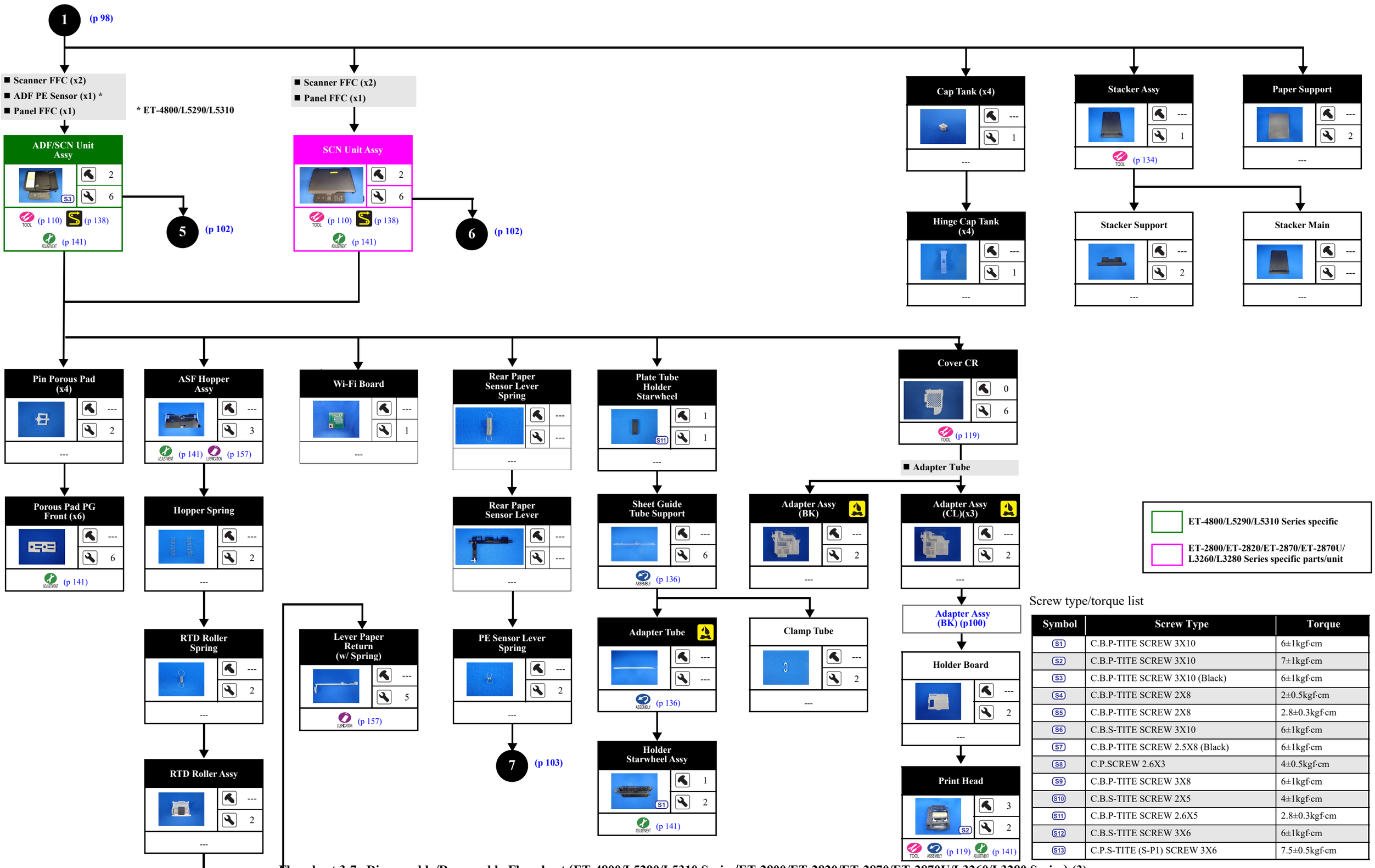
Flowchart 3-5. Disassembly/Reassembly Flowchart (ET-4800/L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series) (1)



Screw type/torque list

Symbol	Screw Type	Torque
S1	C.B.P-TITE SCREW 3X10	6±1kgf·cm
S2	C.B.P-TITE SCREW 3X10	7±1kgf·cm
S3	C.B.P-TITE SCREW 3X10 (Black)	6±1kgf·cm
S4	C.B.P-TITE SCREW 2X8	2±0.5kgf·cm
S5	C.B.P-TITE SCREW 2X8	2.8±0.3kgf·cm
S6	C.B.S-TITE SCREW 3X10	6±1kgf·cm
S7	C.B.P-TITE SCREW 2.5X8 (Black)	6±1kgf·cm
S8	C.P.SCREW 2.6X3	4±0.5kgf·cm
S9	C.B.P-TITE SCREW 3X8	6±1kgf·cm
S10	C.B.S-TITE SCREW 2X5	4±1kgf·cm
S11	C.B.P-TITE SCREW 2.6X5	2.8±0.3kgf·cm
S12	C.B.S-TITE SCREW 3X6	6±1kgf·cm
S13	C.P.S-TITE (S-P1) SCREW 3X6	7.5±0.5kgf·cm

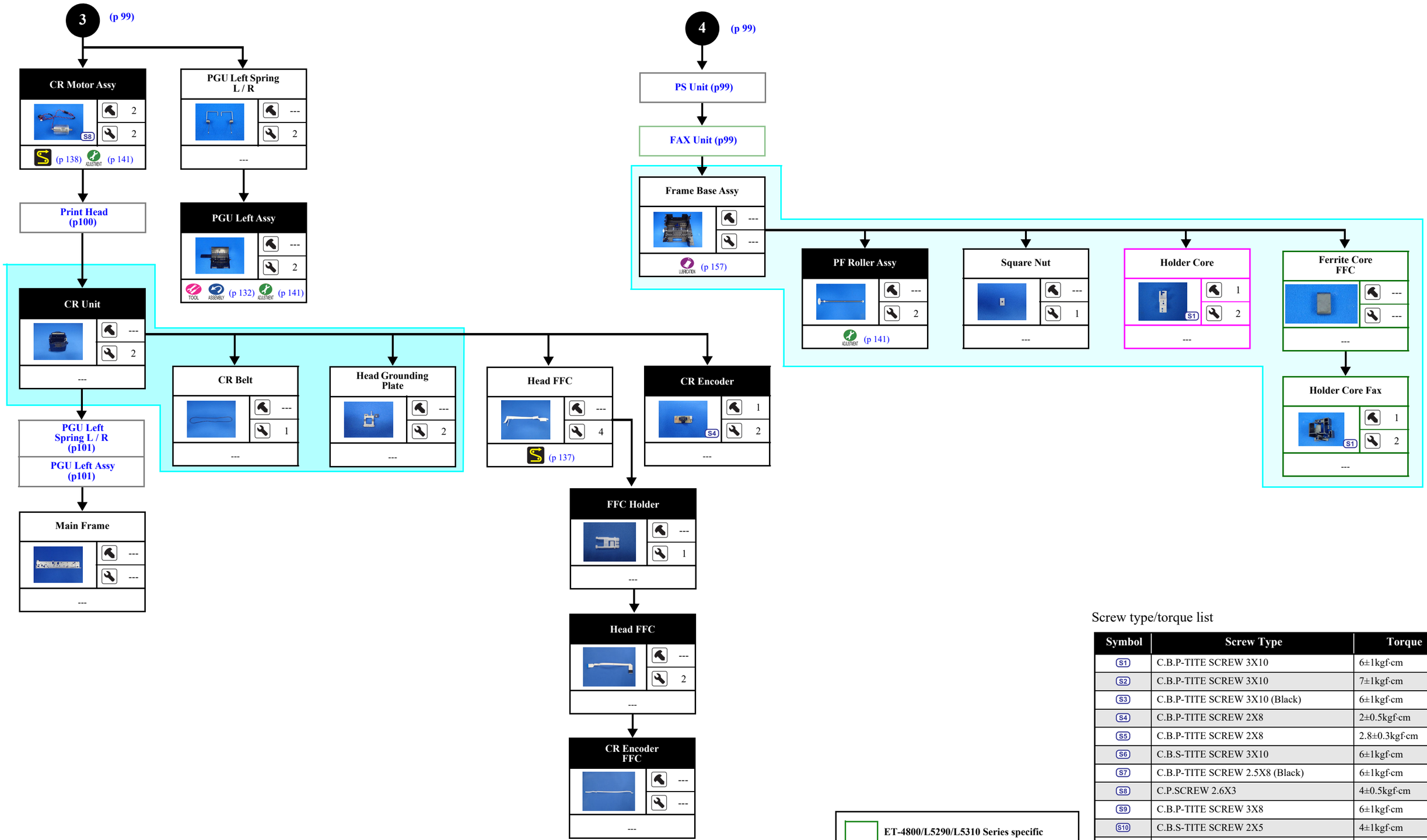
Flowchart 3-6. Disassembly/Reassembly Flowchart (ET-4800/L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series) (2)



Screw type/torque list

Symbol	Screw Type	Torque
S1	C.B.P-TITE SCREW 3X10	6±1kgf·cm
S2	C.B.P-TITE SCREW 3X10	7±1kgf·cm
S3	C.B.P-TITE SCREW 3X10 (Black)	6±1kgf·cm
S4	C.B.P-TITE SCREW 2X8	2±0.5kgf·cm
S5	C.B.P-TITE SCREW 2X8	2.8±0.3kgf·cm
S6	C.B.S-TITE SCREW 3X10	6±1kgf·cm
S7	C.B.P-TITE SCREW 2.5X8 (Black)	6±1kgf·cm
S8	C.P.SCREW 2.6X3	4±0.5kgf·cm
S9	C.B.P-TITE SCREW 3X8	6±1kgf·cm
S10	C.B.S-TITE SCREW 2X5	4±1kgf·cm
S11	C.B.P-TITE SCREW 2.6X5	2.8±0.3kgf·cm
S12	C.B.S-TITE SCREW 3X6	6±1kgf·cm
S13	C.P.S-TITE (S-P1) SCREW 3X6	7.5±0.5kgf·cm

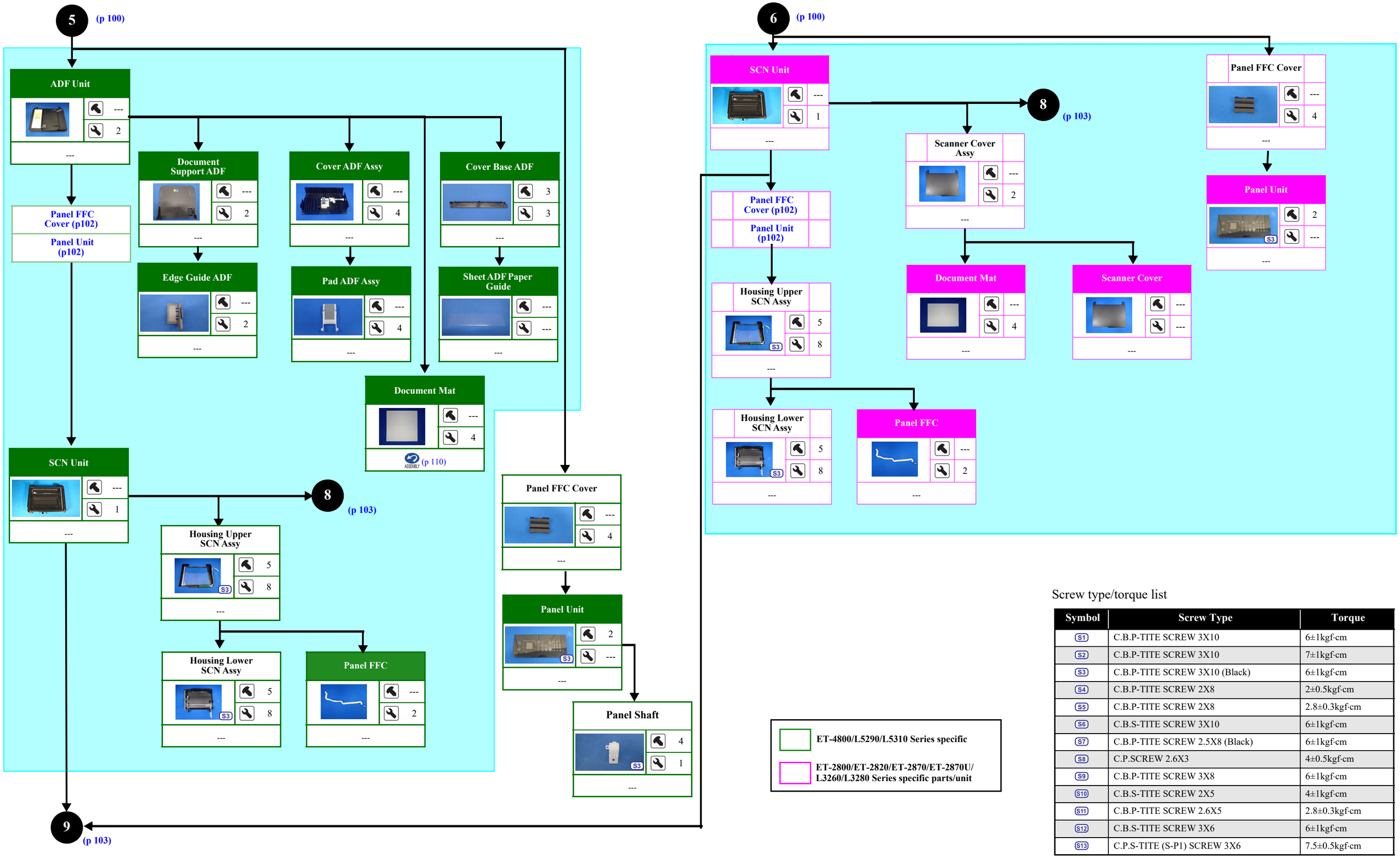
Flowchart 3-7. Disassembly/Reassembly Flowchart (ET-4800/L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series) (3)



Screw type/torque list

Symbol	Screw Type	Torque
S1	C.B.P-TITE SCREW 3X10	6±1kgf·cm
S2	C.B.P-TITE SCREW 3X10	7±1kgf·cm
S3	C.B.P-TITE SCREW 3X10 (Black)	6±1kgf·cm
S4	C.B.P-TITE SCREW 2X8	2±0.5kgf·cm
S5	C.B.P-TITE SCREW 2X8	2.8±0.3kgf·cm
S6	C.B.S-TITE SCREW 3X10	6±1kgf·cm
S7	C.B.P-TITE SCREW 2.5X8 (Black)	6±1kgf·cm
S8	C.P.SCREW 2.6X3	4±0.5kgf·cm
S9	C.B.P-TITE SCREW 3X8	6±1kgf·cm
S10	C.B.S-TITE SCREW 2X5	4±1kgf·cm
S11	C.B.P-TITE SCREW 2.6X5	2.8±0.3kgf·cm
S12	C.B.S-TITE SCREW 3X6	6±1kgf·cm
S13	C.P.S-TITE (S-P1) SCREW 3X6	7.5±0.5kgf·cm

Flowchart 3-8. Disassembly/Reassembly Flowchart (ET-4800/L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series) (4)



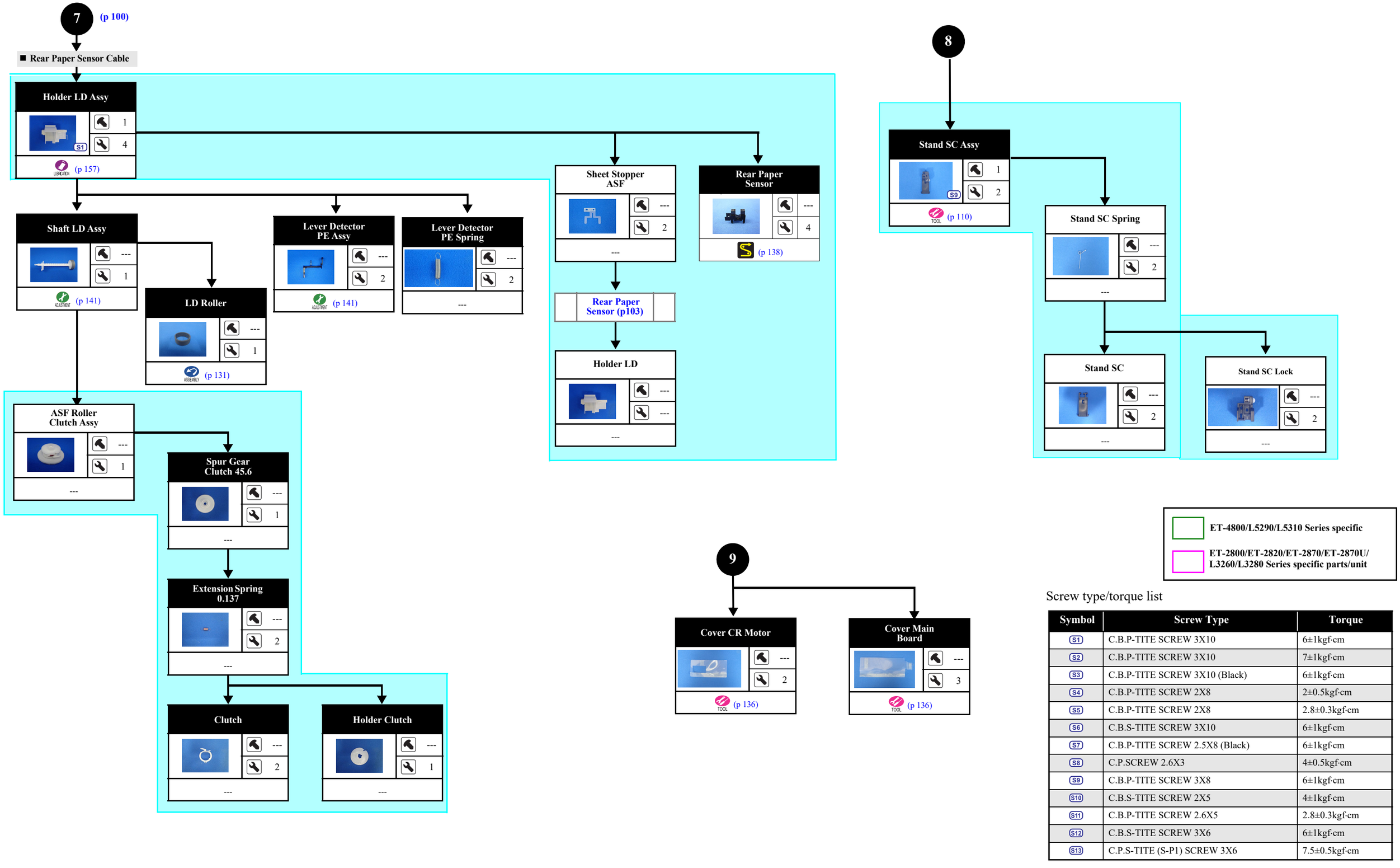
ET-4800/L5290/L5310 Series specific

ET-2800/ET-2820/ET-2870/ET-2870U/ L3260/L3280 Series specific parts/unit

Screw type/torque list

Symbol	Screw Type	Torque
S1	C.B.P-TITE SCREW 3X10	6±1kgf·cm
S2	C.B.P-TITE SCREW 3X10	7±1kgf·cm
S3	C.B.P-TITE SCREW 3X10 (Black)	6±1kgf·cm
S4	C.B.P-TITE SCREW 2X8	2±0.5kgf·cm
S5	C.B.P-TITE SCREW 2X8	2.8±0.3kgf·cm
S6	C.B.S-TITE SCREW 3X10	6±1kgf·cm
S7	C.B.P-TITE SCREW 2.5X8 (Black)	6±1kgf·cm
S8	C.P.SCREW 2.6X3	4±0.5kgf·cm
S9	C.B.P-TITE SCREW 3X8	6±1kgf·cm
S10	C.B.S-TITE SCREW 2X5	4±1kgf·cm
S11	C.B.P-TITE SCREW 2.6X5	2.8±0.3kgf·cm
S12	C.B.S-TITE SCREW 3X6	6±1kgf·cm
S13	C.P.S-TITE (S-P1) SCREW 3X6	7.5±0.5kgf·cm

Flowchart 3-9. Disassembly/Reassembly Flowchart (ET-4800/L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series) (5)

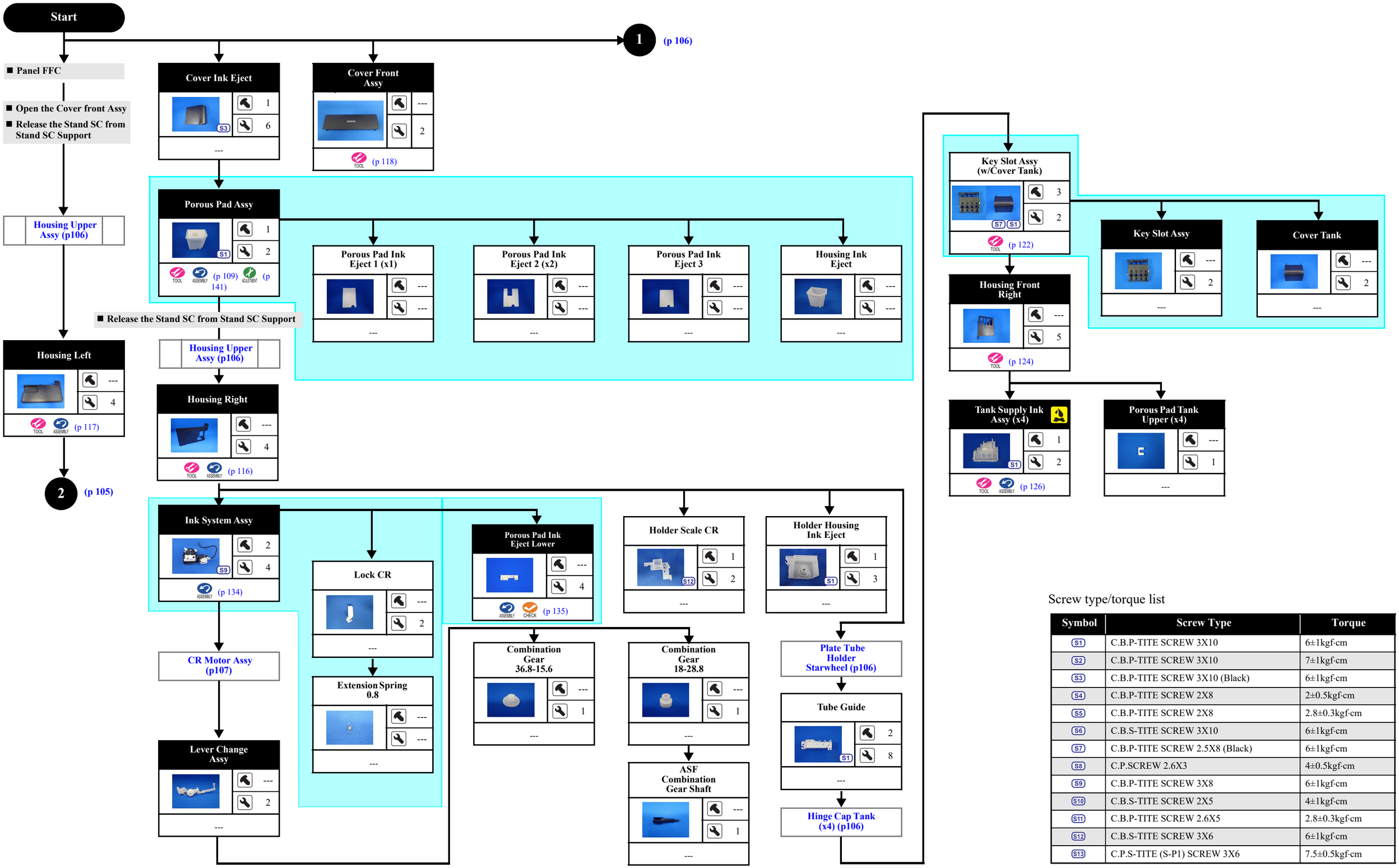


Screw type/torque list

Symbol	Screw Type	Torque
S1	C.B.P-TITE SCREW 3X10	6±1kgf·cm
S2	C.B.P-TITE SCREW 3X10	7±1kgf·cm
S3	C.B.P-TITE SCREW 3X10 (Black)	6±1kgf·cm
S4	C.B.P-TITE SCREW 2X8	2±0.5kgf·cm
S5	C.B.P-TITE SCREW 2X8	2.8±0.3kgf·cm
S6	C.B.S-TITE SCREW 3X10	6±1kgf·cm
S7	C.B.P-TITE SCREW 2.5X8 (Black)	6±1kgf·cm
S8	C.P.SCREW 2.6X3	4±0.5kgf·cm
S9	C.B.P-TITE SCREW 3X8	6±1kgf·cm
S10	C.B.S-TITE SCREW 2X5	4±1kgf·cm
S11	C.B.P-TITE SCREW 2.6X5	2.8±0.3kgf·cm
S12	C.B.S-TITE SCREW 3X6	6±1kgf·cm
S13	C.P.S-TITE (S-P1) SCREW 3X6	7.5±0.5kgf·cm

Flowchart 3-10. Disassembly/Reassembly Flowchart (ET-4800/L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series) (6)

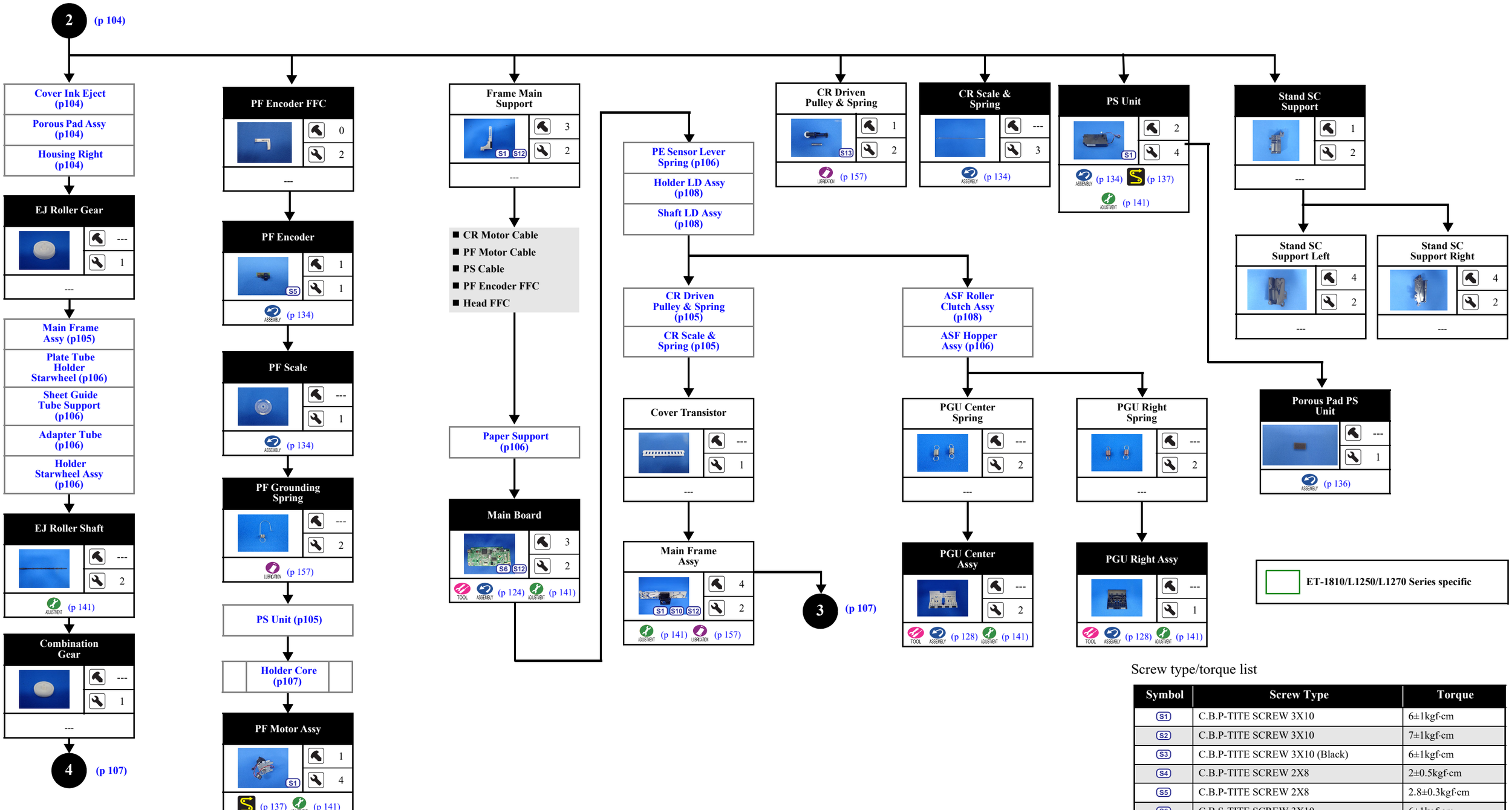
3.3.2.3 Disassembly/Reassembly Flowchart (L1210/L1230 Series/ET-1810/L1250/L1270 Series)



Flowchart 3-11. Disassembly/Reassembly Flowchart (L1210/L1230 Series) (1)

Screw type/torque list

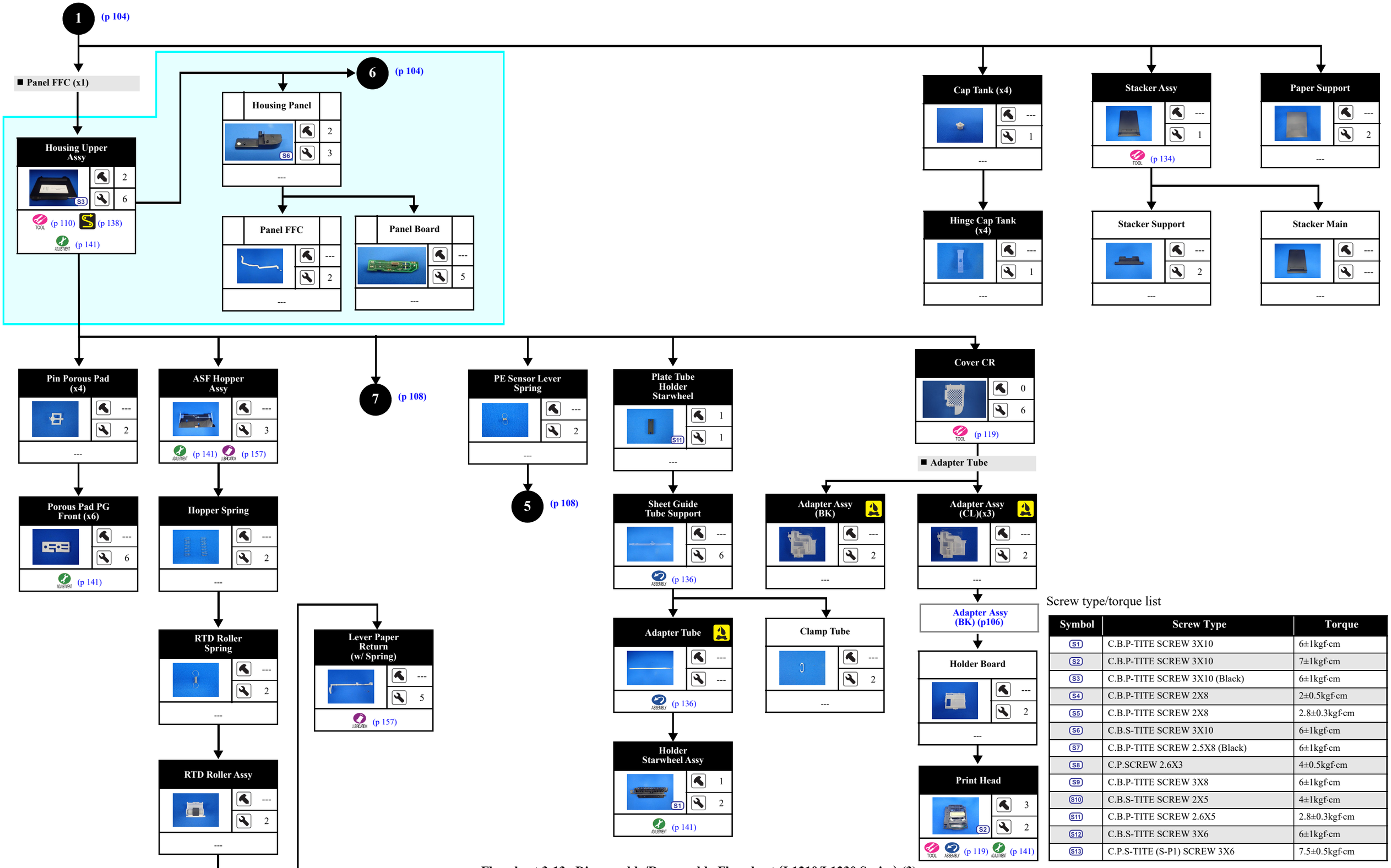
Symbol	Screw Type	Torque
S1	C.B.P-TITE SCREW 3X10	6±1kgf·cm
S2	C.B.P-TITE SCREW 3X10	7±1kgf·cm
S3	C.B.P-TITE SCREW 3X10 (Black)	6±1kgf·cm
S4	C.B.P-TITE SCREW 2X8	2±0.5kgf·cm
S5	C.B.P-TITE SCREW 2X8	2.8±0.3kgf·cm
S6	C.B.S-TITE SCREW 3X10	6±1kgf·cm
S7	C.B.P-TITE SCREW 2.5X8 (Black)	6±1kgf·cm
S8	C.P.SCREW 2.6X3	4±0.5kgf·cm
S9	C.B.P-TITE SCREW 3X8	6±1kgf·cm
S10	C.B.S-TITE SCREW 2X5	4±1kgf·cm
S11	C.B.P-TITE SCREW 2.6X5	2.8±0.3kgf·cm
S12	C.B.S-TITE SCREW 3X6	6±1kgf·cm
S13	C.P.S-TITE (S-P1) SCREW 3X6	7.5±0.5kgf·cm



Screw type/torque list

Symbol	Screw Type	Torque
S1	C.B.P-TITE SCREW 3X10	6±1kgf·cm
S2	C.B.P-TITE SCREW 3X10	7±1kgf·cm
S3	C.B.P-TITE SCREW 3X10 (Black)	6±1kgf·cm
S4	C.B.P-TITE SCREW 2X8	2±0.5kgf·cm
S5	C.B.P-TITE SCREW 2X8	2.8±0.3kgf·cm
S6	C.B.S-TITE SCREW 3X10	6±1kgf·cm
S7	C.B.P-TITE SCREW 2.5X8 (Black)	6±1kgf·cm
S8	C.P.SCREW 2.6X3	4±0.5kgf·cm
S9	C.B.P-TITE SCREW 3X8	6±1kgf·cm
S10	C.B.S-TITE SCREW 2X5	4±1kgf·cm
S11	C.B.P-TITE SCREW 2.6X5	2.8±0.3kgf·cm
S12	C.B.S-TITE SCREW 3X6	6±1kgf·cm
S13	C.P.S-TITE (S-P1) SCREW 3X6	7.5±0.5kgf·cm

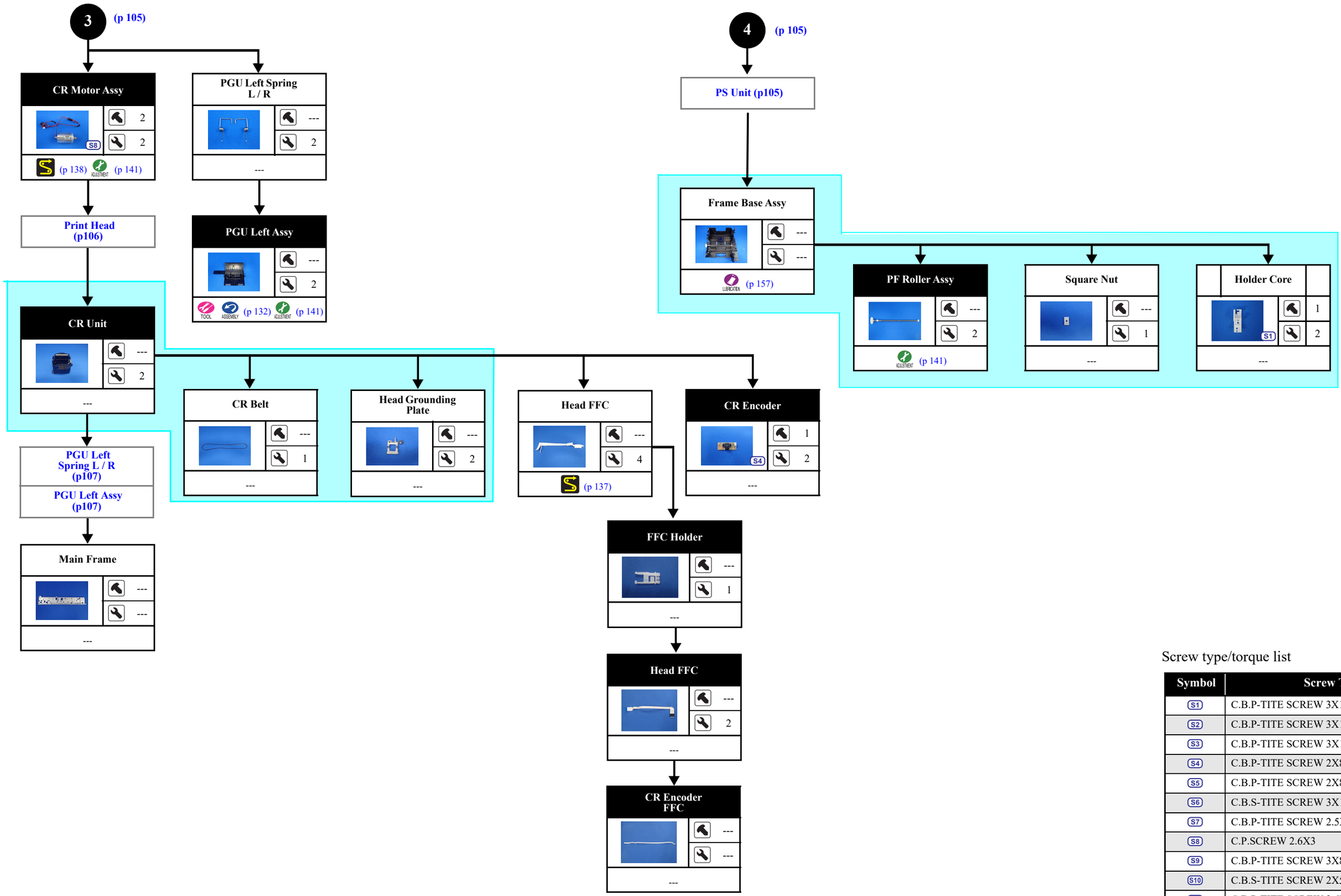
Flowchart 3-12. Disassembly/Reassembly Flowchart (L1210/L1230 Series) (2)



Flowchart 3-13. Disassembly/Reassembly Flowchart (L1210/L1230 Series) (3)

Screw type/torque list

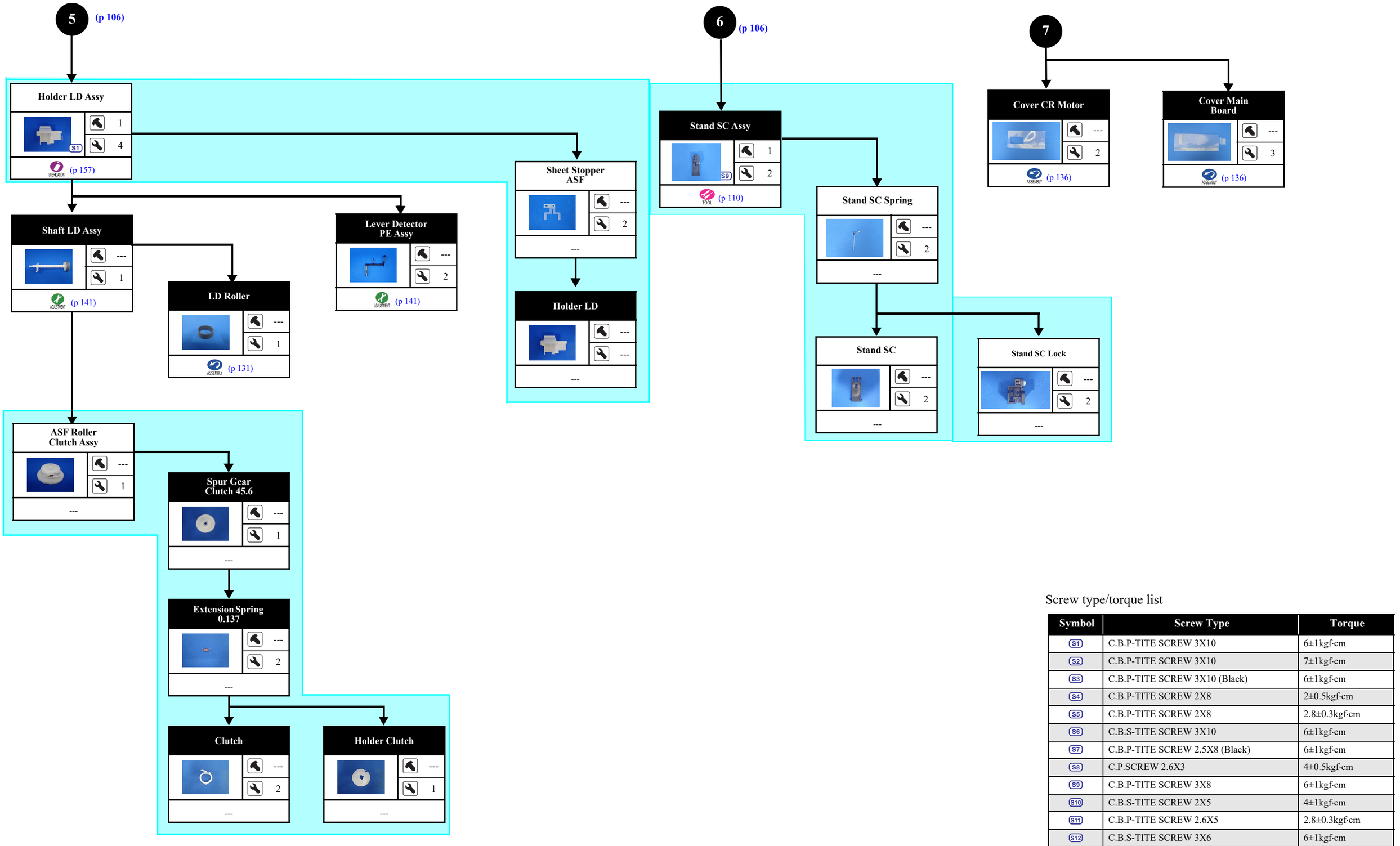
Symbol	Screw Type	Torque
S1	C.B.P-TITE SCREW 3X10	6±1kgf·cm
S2	C.B.P-TITE SCREW 3X10	7±1kgf·cm
S3	C.B.P-TITE SCREW 3X10 (Black)	6±1kgf·cm
S4	C.B.P-TITE SCREW 2X8	2±0.5kgf·cm
S5	C.B.P-TITE SCREW 2X8	2.8±0.3kgf·cm
S6	C.B.S-TITE SCREW 3X10	6±1kgf·cm
S7	C.B.P-TITE SCREW 2.5X8 (Black)	6±1kgf·cm
S8	C.P.SCREW 2.6X3	4±0.5kgf·cm
S9	C.B.P-TITE SCREW 3X8	6±1kgf·cm
S10	C.B.S-TITE SCREW 2X5	4±1kgf·cm
S11	C.B.P-TITE SCREW 2.6X5	2.8±0.3kgf·cm
S12	C.B.S-TITE SCREW 3X6	6±1kgf·cm
S13	C.P.S-TITE (S-P1) SCREW 3X6	7.5±0.5kgf·cm



Screw type/torque list

Symbol	Screw Type	Torque
S1	C.B.P-TITE SCREW 3X10	6±1kgf·cm
S2	C.B.P-TITE SCREW 3X10	7±1kgf·cm
S3	C.B.P-TITE SCREW 3X10 (Black)	6±1kgf·cm
S4	C.B.P-TITE SCREW 2X8	2±0.5kgf·cm
S5	C.B.P-TITE SCREW 2X8	2.8±0.3kgf·cm
S6	C.B.S-TITE SCREW 3X10	6±1kgf·cm
S7	C.B.P-TITE SCREW 2.5X8 (Black)	6±1kgf·cm
S8	C.P.SCREW 2.6X3	4±0.5kgf·cm
S9	C.B.P-TITE SCREW 3X8	6±1kgf·cm
S10	C.B.S-TITE SCREW 2X5	4±1kgf·cm
S11	C.B.P-TITE SCREW 2.6X5	2.8±0.3kgf·cm
S12	C.B.S-TITE SCREW 3X6	6±1kgf·cm
S13	C.P.S-TITE (S-P1) SCREW 3X6	7.5±0.5kgf·cm

Flowchart 3-14. Disassembly/Reassembly Flowchart (L1210/L1230 Series) (4)



Screw type/torque list

Symbol	Screw Type	Torque
S1	C.B.P-TITE SCREW 3X10	6±1kgf·cm
S2	C.B.P-TITE SCREW 3X10	7±1kgf·cm
S3	C.B.P-TITE SCREW 3X10 (Black)	6±1kgf·cm
S4	C.B.P-TITE SCREW 2X8	2±0.5kgf·cm
S5	C.B.P-TITE SCREW 2X8	2.8±0.3kgf·cm
S6	C.B.S-TITE SCREW 3X10	6±1kgf·cm
S7	C.B.P-TITE SCREW 2.5X8 (Black)	6±1kgf·cm
S8	C.P.SCREW 2.6X3	4±0.5kgf·cm
S9	C.B.P-TITE SCREW 3X8	6±1kgf·cm
S10	C.B.S-TITE SCREW 2X5	4±1kgf·cm
S11	C.B.P-TITE SCREW 2.6X5	2.8±0.3kgf·cm
S12	C.B.S-TITE SCREW 3X6	6±1kgf·cm
S13	C.P.S-TITE (S-P1) SCREW 3X6	7.5±0.5kgf·cm

Flowchart 3-15. Disassembly/Reassembly Flowchart (L1210/L1230 Series) (5)

3.3.3 Repairing Major Components Disassembly/ Assembly Procedure

CHECK

- **Items with underline in this section are describing disassembly procedure of parts/unit supplied as ASP.**
- **In this section, basically the pictures of L3210/L3230 Series are used to describe the disassembling procedure.**

3.3.3.1 Porous Pad Assy

1. Remove the screw fixing the Cover Ink Eject.
2. Remove the Cover Ink Eject in the direction of the arrow.

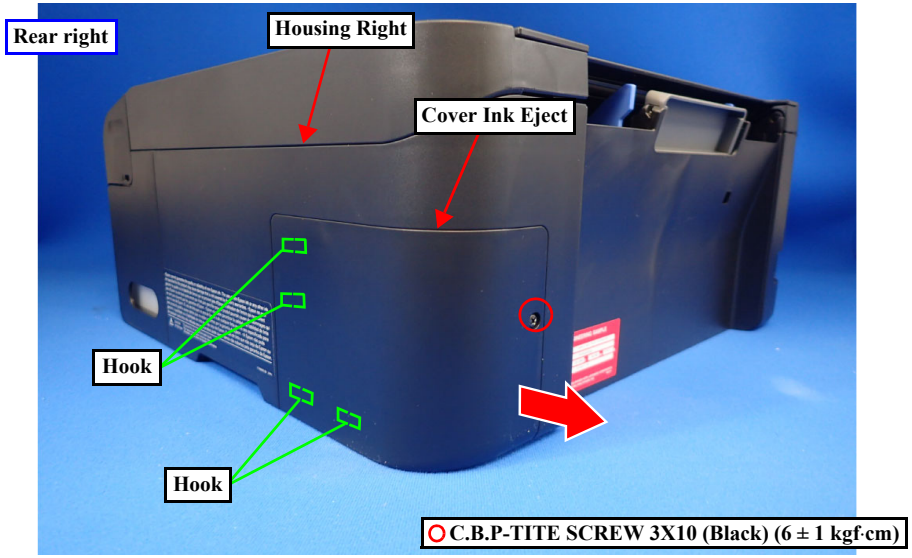


Figure 3-14. Removing the Cover Ink Eject

3. Remove the screw fixing the Porous Pad Assy.
4. Remove the Porous Pad Assy in the direction of the arrow.

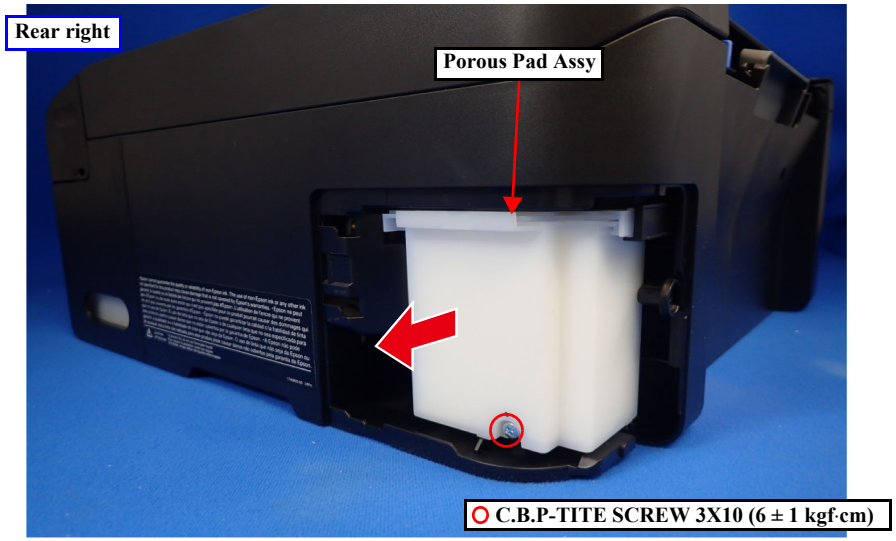


Figure 3-15. Removing the Porous Pad Assy

ASSEMBLY

When reassembling the Cover Ink Eject, insert the four hooks on the cover to the Housing Right.

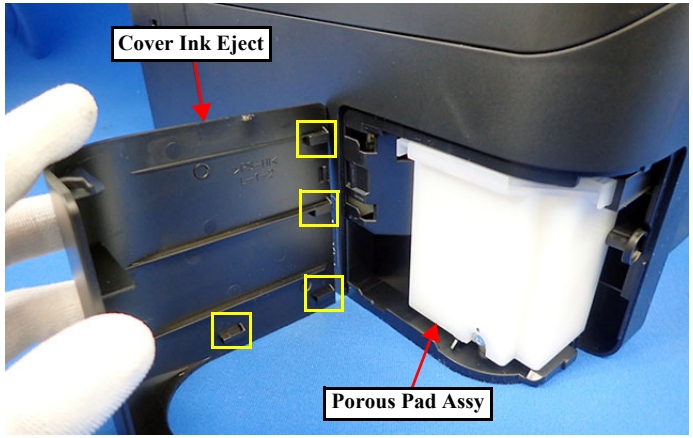


Figure 3-16. Cover Ink Eject

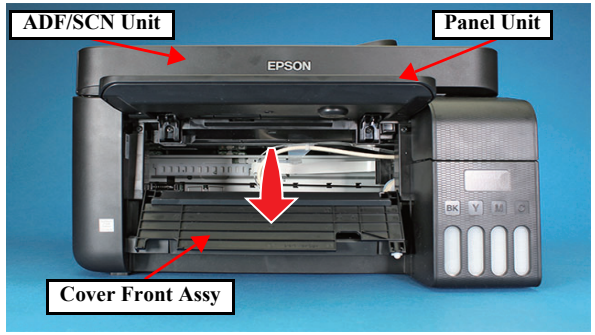
3.3.3.2 Scanner Unit, ADF/SCN Unit, Housing Upper Assy

CHECK

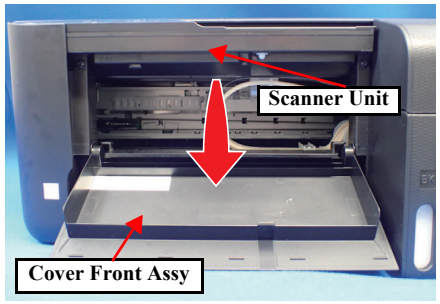
In this section, disassembly/reassembly of the Scanner Unit, ADF/SCN Unit, and Housing Upper Assy are explained. The printer is equipped with one of them, and their disassembly/ reassembly procedures are mostly the same.

1. Open the Panel Unit. (ET-4800/L5290/L5310 Series/ ET-2800/ET-2820/ ET-2870/ET-2870U/L3260/L3280 Series only)
2. Open the Cover Front Assy.

ET-4800/L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series



ET-2400/ET-2810/ET-2860/L3250/L3270 Series/L3210/L3230 Series/L3200 Series



L1210/L1230 Series/ET-1810/L1250/L1270 Series

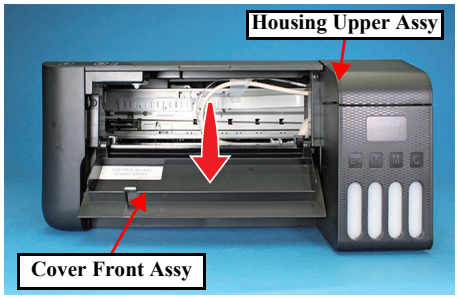
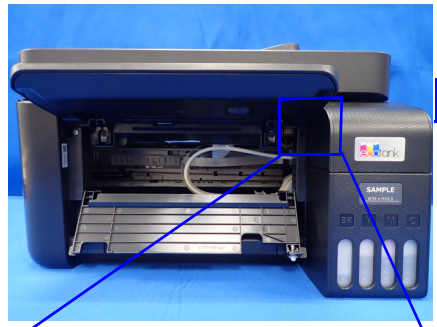


Figure 3-17. Removing the screws (1)

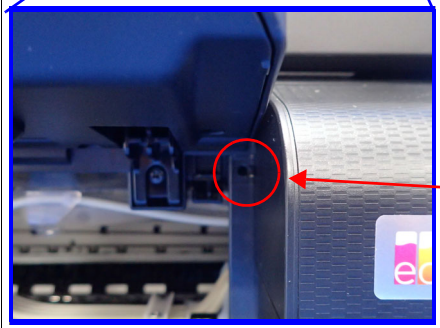
CAUTION

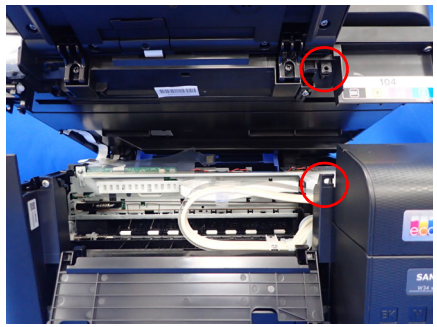
Do not screw the position shown in the figure below.

To allow the scanner to open.



all models





3. Release the dowel of the Stand SC from the notch on the rear side of Stand SC Support.

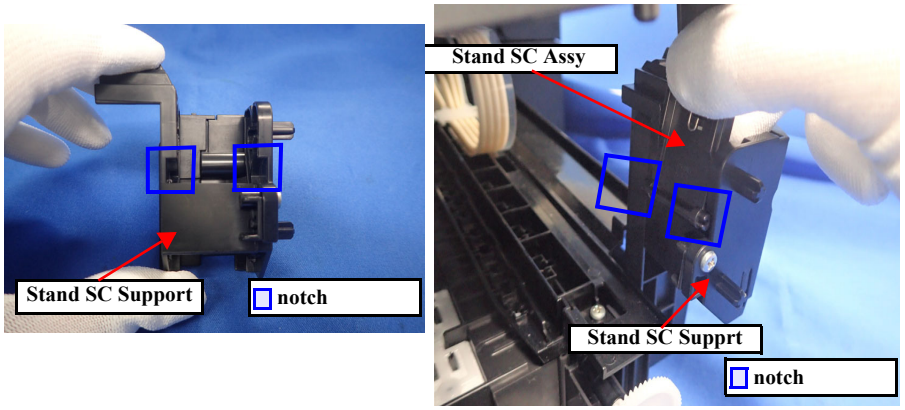


Figure 3-18. Stand SC Support

ASSEMBLY

While holding Stand SC, insert the dowel of Stand SC from the notch on the rear side of Stand SC Support and attach it.

CAUTION

Be careful not to damage root and dowel of Stand SC.

4. Disconnect and release the cables/FFCs according to the following procedure.

   - ET-4800/L5290/L5310 Series: ADF/SCN Unit (p 112)
   - ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series/ET-2400/ET-2810/ET-2860/L3250/L3270 Series/L3210/L3230 Series/L3200 Series: Scanner Unit (p 114)
   - L1210/L1230 Series/ET-1810/L1250/L1270 Series: Housing Upper Assy (p 114)

☐ ADF/SCN Unit (ET-4800/L5290/L5310 Series)

1. Lift up the ADF/SCN Unit to disconnect the Panel FFC from the connectors on the Main Board.
2. Remove the Cover Main Board.

CAUTION

When you remove the Cover Main Board once, the adhesive strength of the double-side tape will drop, so when change the Cover Main Board, either replace it with a new Cover Main Board, or change the double-side tape.

See Cover Main Board *(p136)*.

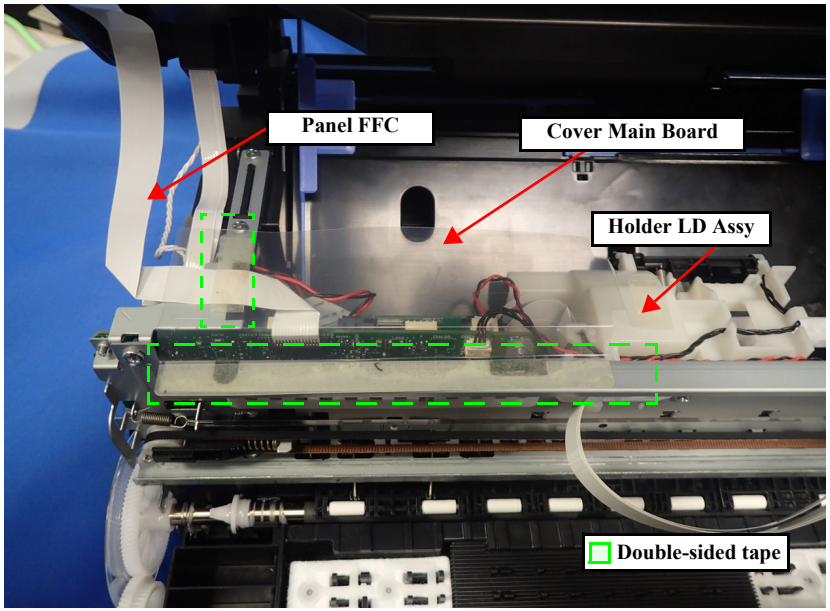


Figure 3-19. Disconnecting the Panel FFC

3. Peel off the double-sided tape that secure the Panel FFC, and then remove the ferrite core.

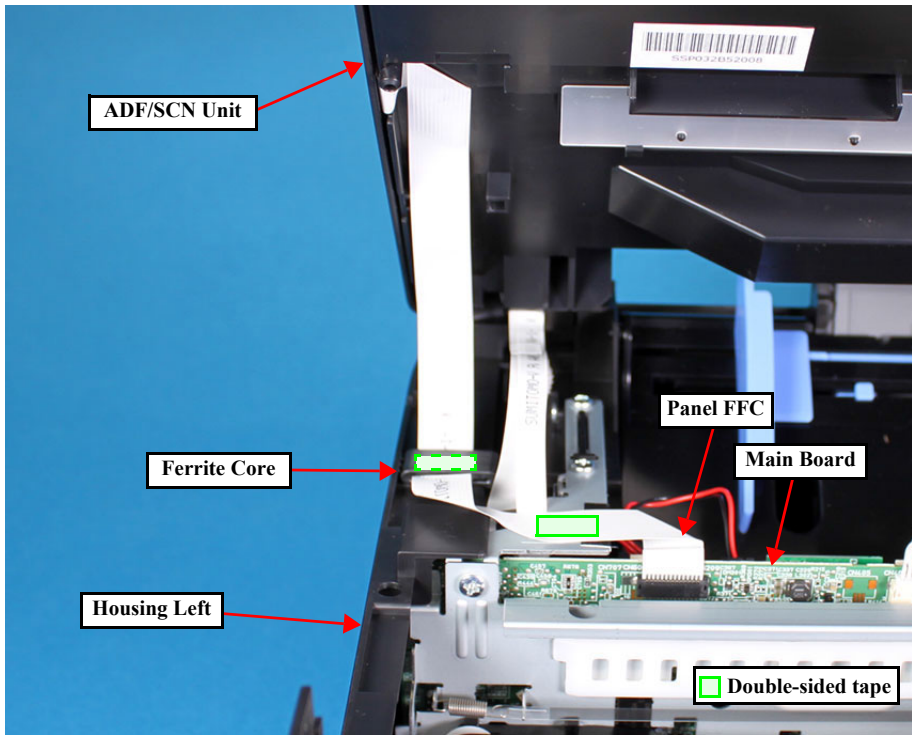


Figure 3-20. Disconnecting the Panel FFC

CAUTION

In the next step, remove the Housing Left to remove the ADF PE Sensor and the SCN FFC. Make sure to hold the ADF/ SCN Unit while working so as not to let it close.

4. Remove the screw and release the dowel of the Stand SC Support.
5. Lift the Housing Left slightly to release the tab on the Housing Left from the rib on the Frame Base Assy shown in the figure below.
6. Pull the Housing Left obliquely in the direction of the arrow.

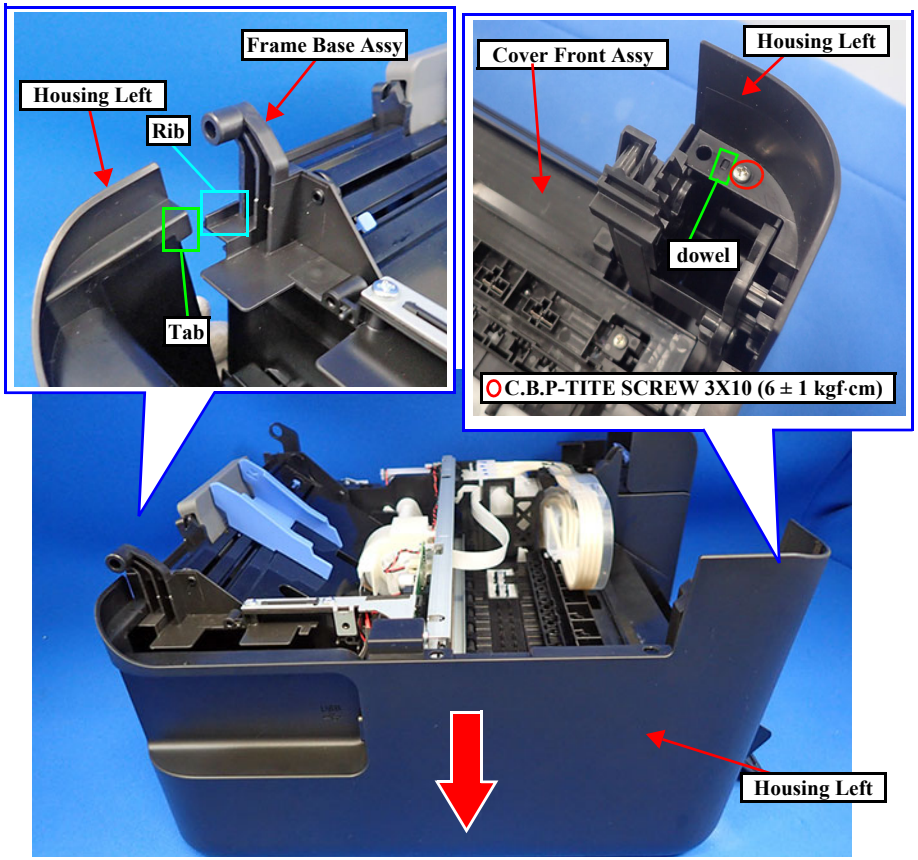


Figure 3-21. Disconnecting the SCN FFC and cable (1)

7. Disconnect the SCN FFC (x2: CN706/CN409), and ADF PE Sensor cable (CN411) from the connectors on the Main Board.

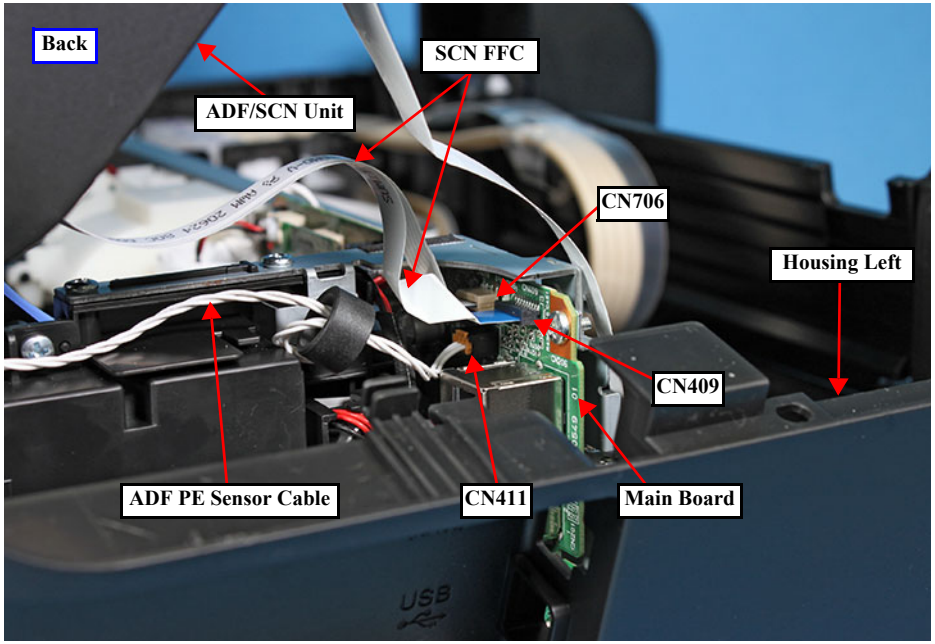


Figure 3-22. Disconnecting the SCN FFC and cable (3)

8. Go to Step 5 (p.115).

☐ Scanner Unit (ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series/ET-2400/ET-2810/ET-2860/L3250/L3270 Series/L3210/L3230 Series/L3200 Series)

1. Lift up the Scanner Unit to disconnect the Panel FFC and SCN FFC (x2) from the connectors on the Main Board.
2. Remove the Cover Main Board.
3. Peel off the double-sided tape that secures the Panel FFC.
4. Remove the screw and grounding cable.(only ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series)

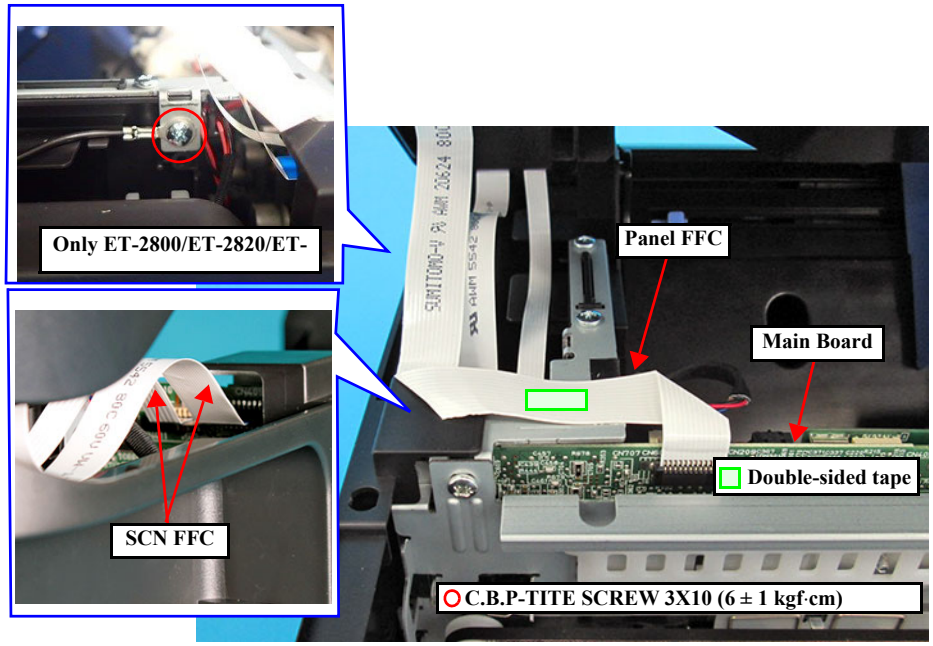


Figure 3-23. Disconnecting the FFCs

5. Go to Step 5 (p.115).

☐ Housing Upper Assy (L1210/L1230 Series/ET-1810/L1250/L1270 Series)

1. Lift up the Housing Upper Assy to disconnect the Panel FFC from the connectors on the Main Board.
2. Remove the Cover Main Board.
3. Peel off the double-sided tape that secures the Panel FFC.

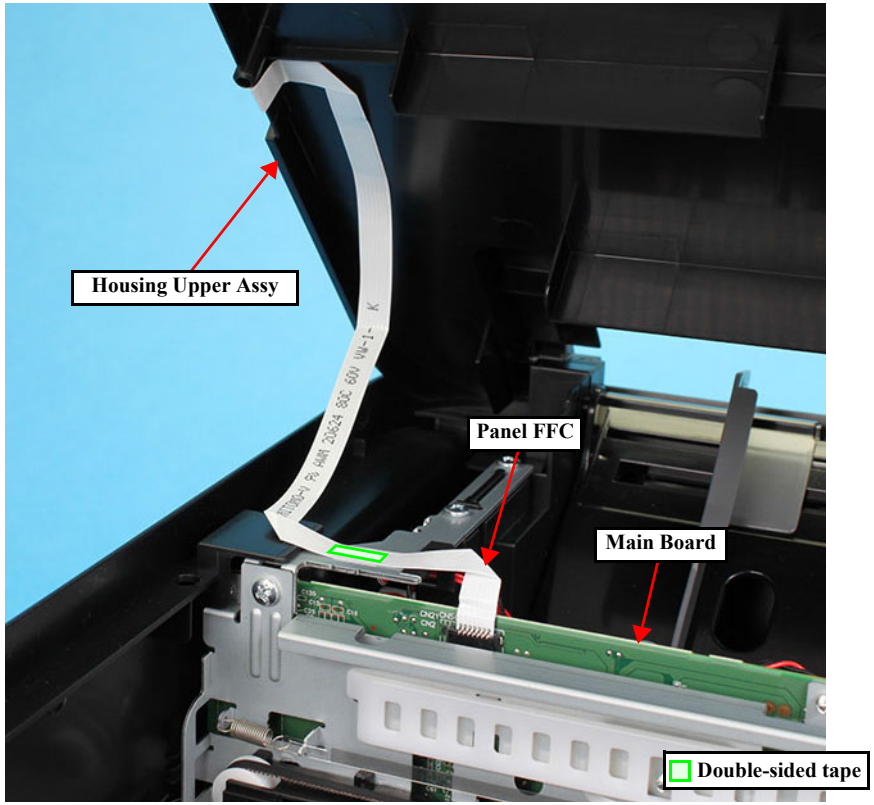


Figure 3-24. Disconnecting the FFC

4. Go to Step 5 (p.115).

5. Slide the Scanner Unit in the direction of the arrow shown in the figure below to remove it.

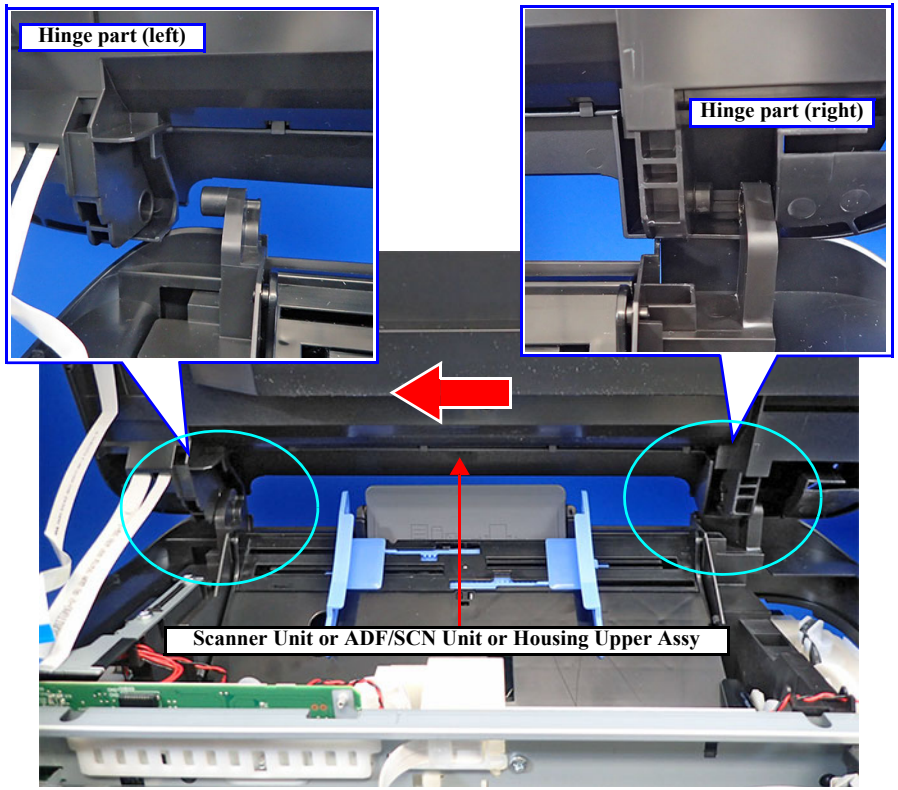


Figure 3-25. Removing the Scanner Unit, ADF/SCN Unit, Housing Upper Assy

ASSEMBLY

Install the Document Mat by following the step below.

1. **Open the Scanner Cover(L3200 Series/L3210/L3230 Series/ET-2400/ET-2810/ET-2860/L3250/L3270 Series/ ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series)/ADF Unit(ET-4800/L5290/L5310 Series).**

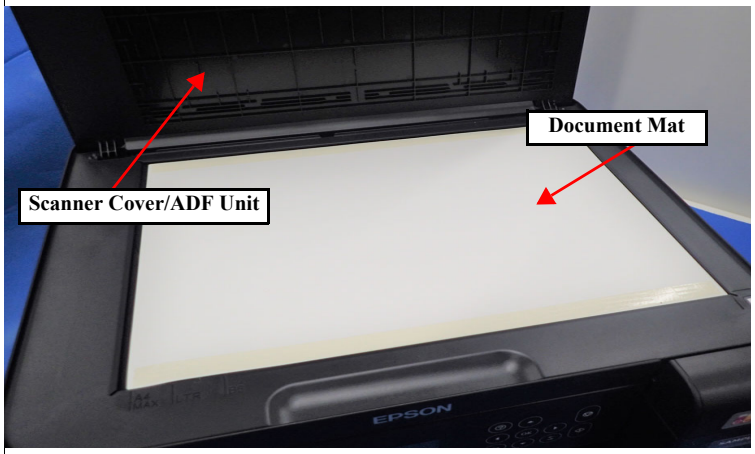


Figure 3-26. Assemble the Document Mat

2. **Put the Document Mat with double-sided tape facing up on Scanner.**
3. **Close the Scanner Cover(L3200 Series/L3210/L3230 Series/ET-2400/ET-2810/ET-2860/L3250/L3270 Series/ ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series)/ADF Unit(ET-4800/L5290/L5310 Series).**

3.3.3.3 Housing Right

1. Remove the Porous Pad Assy. (p109)
2. Remove the Scanner Unit/ADF/SCN Unit/Housing Upper Assy. (p110)
3. Lift the Housing Right slightly to release the tab and hole on the Housing Right from the rib and dowel on the Frame Base Assy shown in the figure below.
4. Remove the Housing Right by releasing the two dowels on the Housing Right from the holes on the Frame Base Assy.

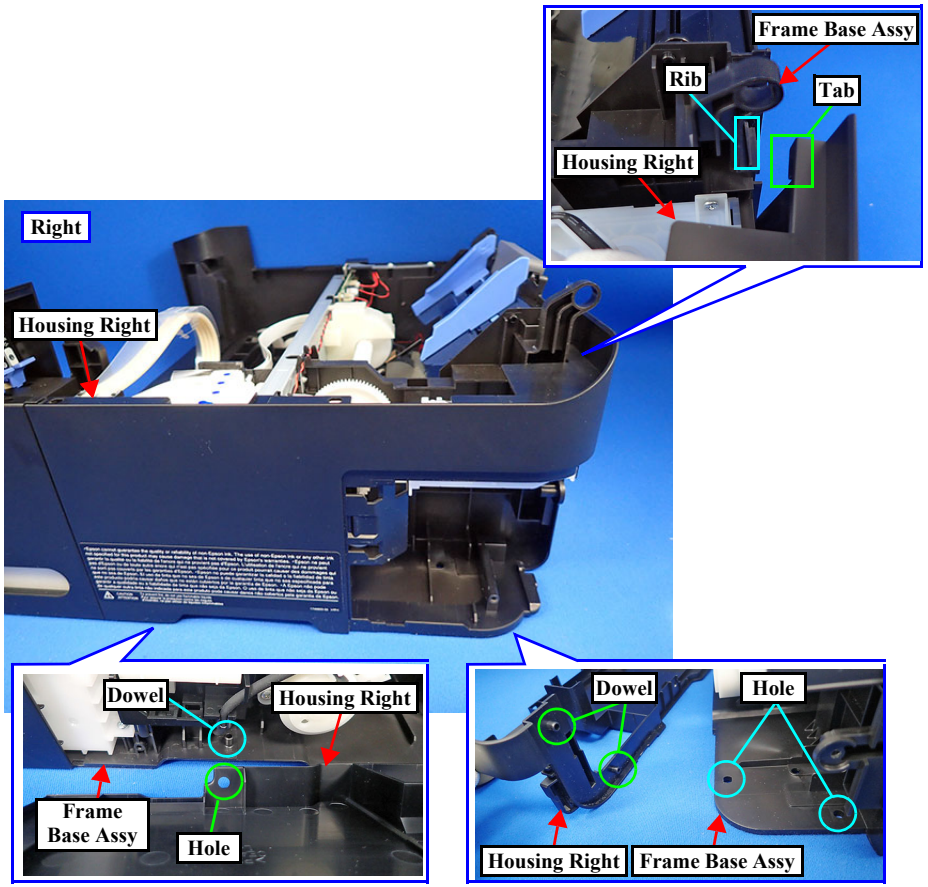


Figure 3-27. Removing the Housing Right

ASSEMBLY

When installing the Housing Right, align the three dowels with the holes and engage the tab with the rib. (See Figure 3-27.)

3.3.3.4 Housing Left

1. Remove the Scanner Unit/ADF/SCN Unit/Housing Upper Assy. (p110)
2. Remove the screw and release the dowel of Stand SC Support.
3. Lift the Housing Left slightly to release the tab on the Housing Left from the rib on the Frame Base Assy shown in the figure below. (except for ET-4800/L5290/L5310 Series)

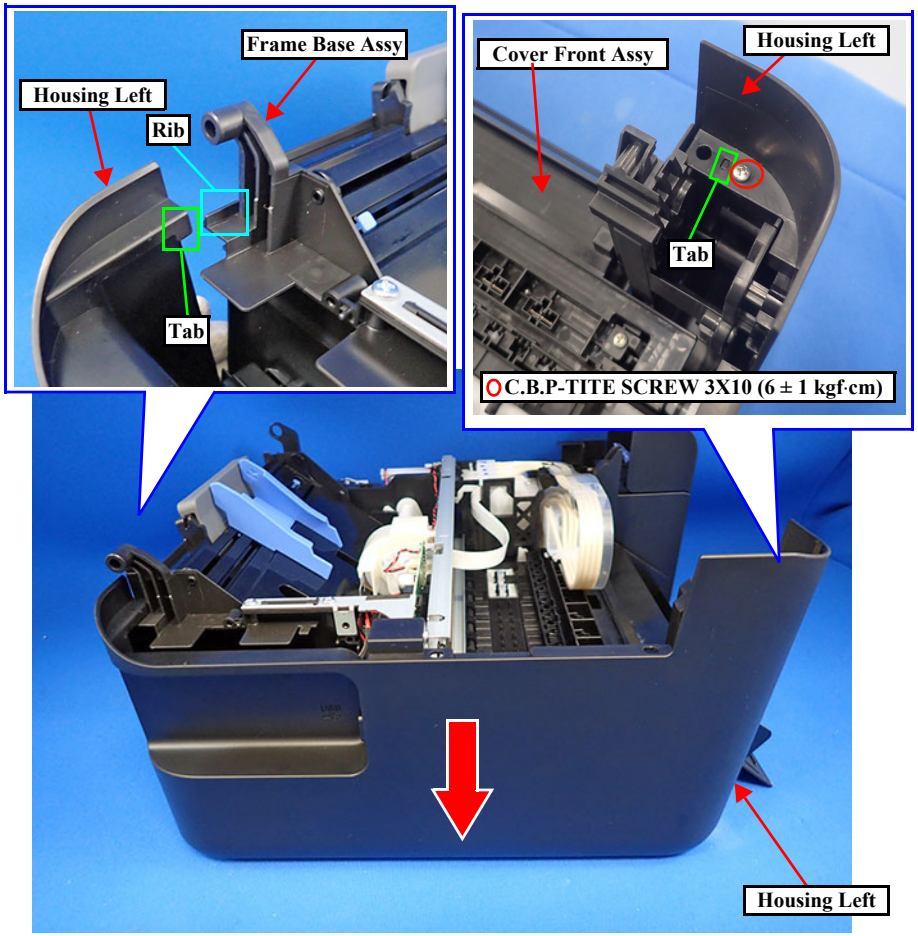


Figure 3-28. Removing the Housing Left (1)

4. Remove the Housing Left by pulling it obliquely in the direction of the arrow to release the hook and the two dowels on the bottom.

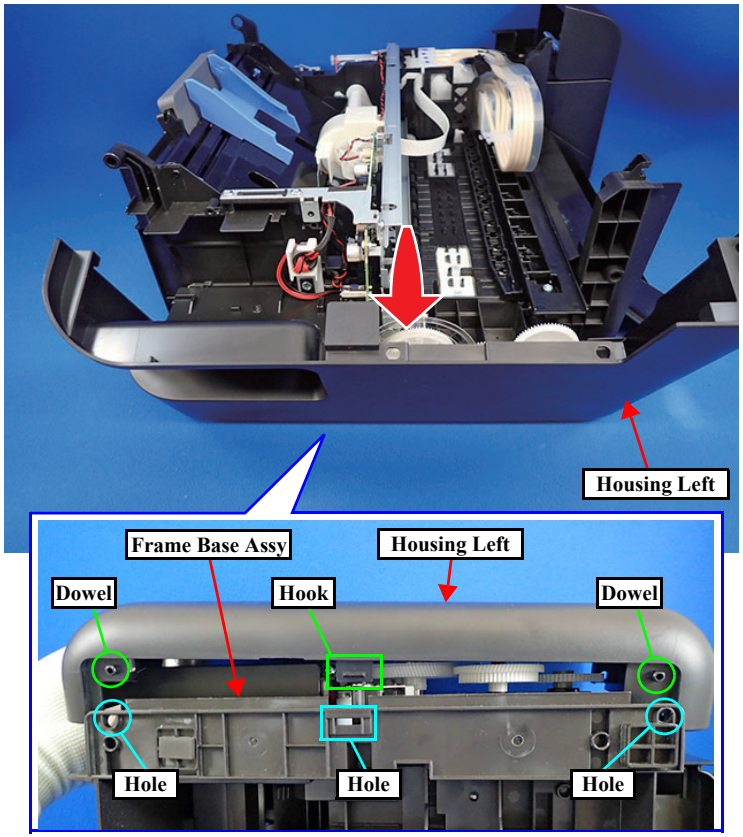


Figure 3-29. Removing the Housing Left (2)

ASSEMBLY

When installing the Housing Left, align the two dowels and the hook with the holes and engage the tab with the rib. (See Figure 3-28 and Figure 3-29.)

3.3.3.5 Cover Front Assy

CHECK

The shape of the Cover Front Assy differs depending on the product, but the procedure for removing the Cover Front Assy is the same.

- **ET-4800/L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series**

- **ET-2400/ET-2810/ET-2860/L3250/L3270 Series/L3200 Series/ L3210/L3230 Series**

- **L1210/L1230 Series/ET-1810/L1250/L1270 Series**

1. Open the Cover Front Assy.

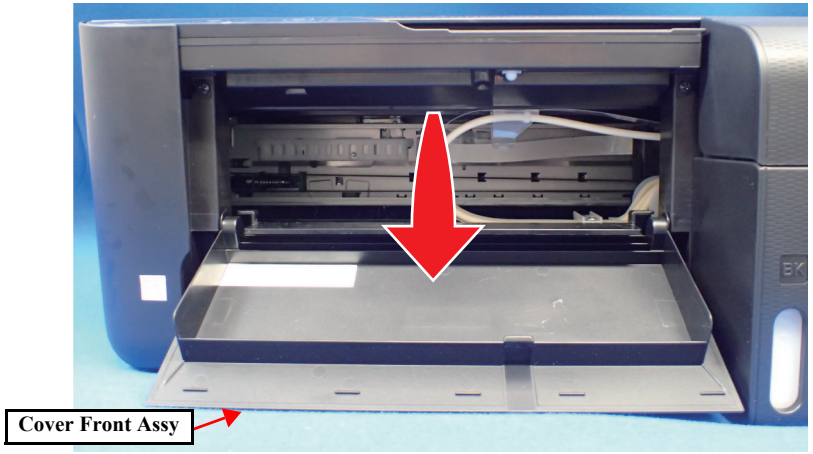


Figure 3-30. Removing the Cover Front Assy (1)

2. Release the dowel on the left and remove the Cover Front Assy.

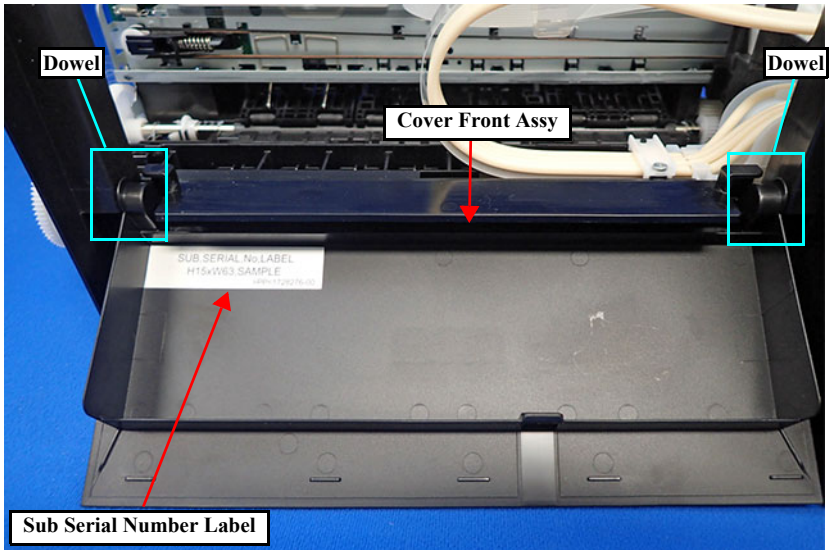


Figure 3-31. Removing the Cover Front Assy (2)

3.3.3.6 Print Head

1. Remove the Scanner Unit/ADF/SCN Unit/Housing Upper Assy. (p110)
2. Rotate the gear toward yourself to release the CR Lock.
3. Move the CR Unit to the point shown below.

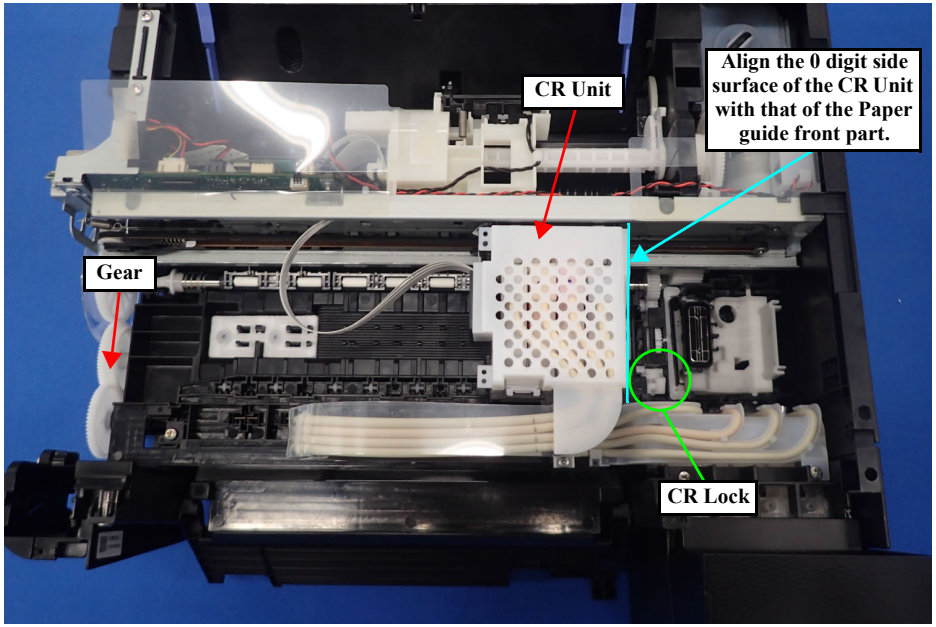


Figure 3-32. Releasing the CR Lock

CAUTION

To prevent effect to the PG and deformation of the Main Frame, be careful to the points below when disassembling/ reassembling the parts attached to the CR Unit.

- **Make sure to work with the CR Unit positioned as shown in Figure 3-32.**
- **Do not apply the strong force vertically.**

4. Release two hook and tab, remove the Cover CR.

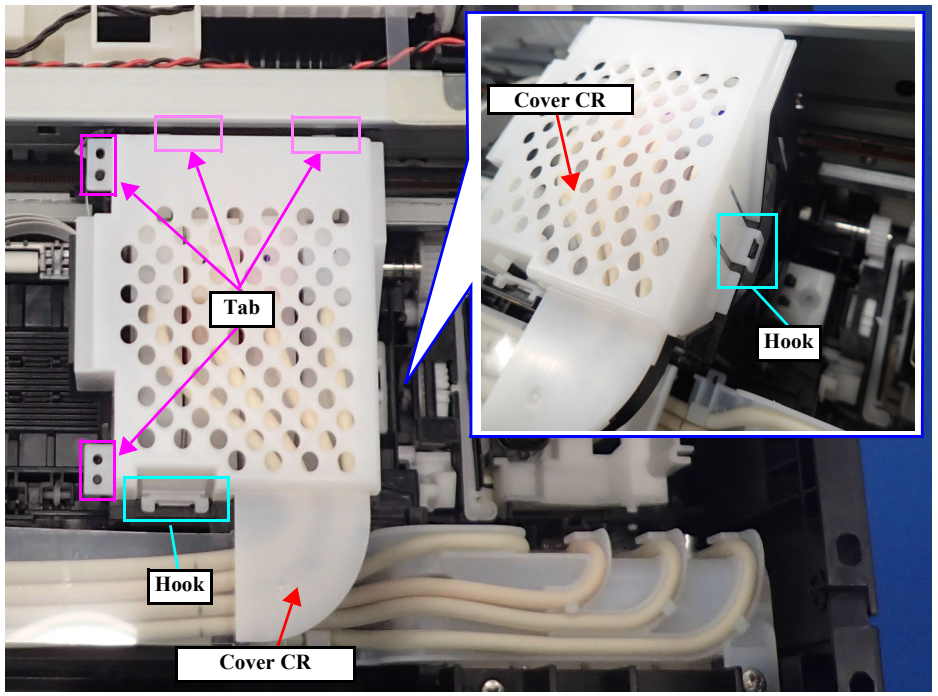


Figure 3-33. Remove the Cover CR

5. Release the Sheet Guide Tube Support from the three hooks.
6. Release the Adapter Tube from the groove on the CR Unit.
7. Release the four hooks and remove the Adapter Assy (x4) from the CR Unit.

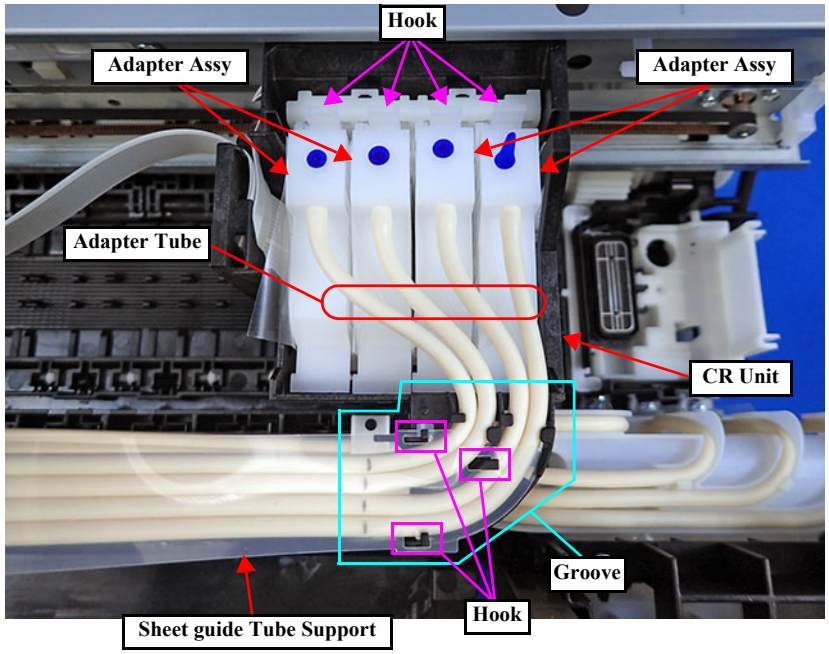


Figure 3-34. Removing the Adapter Assy

8. Release the two hooks on the Holder Board with a flathead screwdriver or the like and remove the Holder Board in the direction of the red arrow.

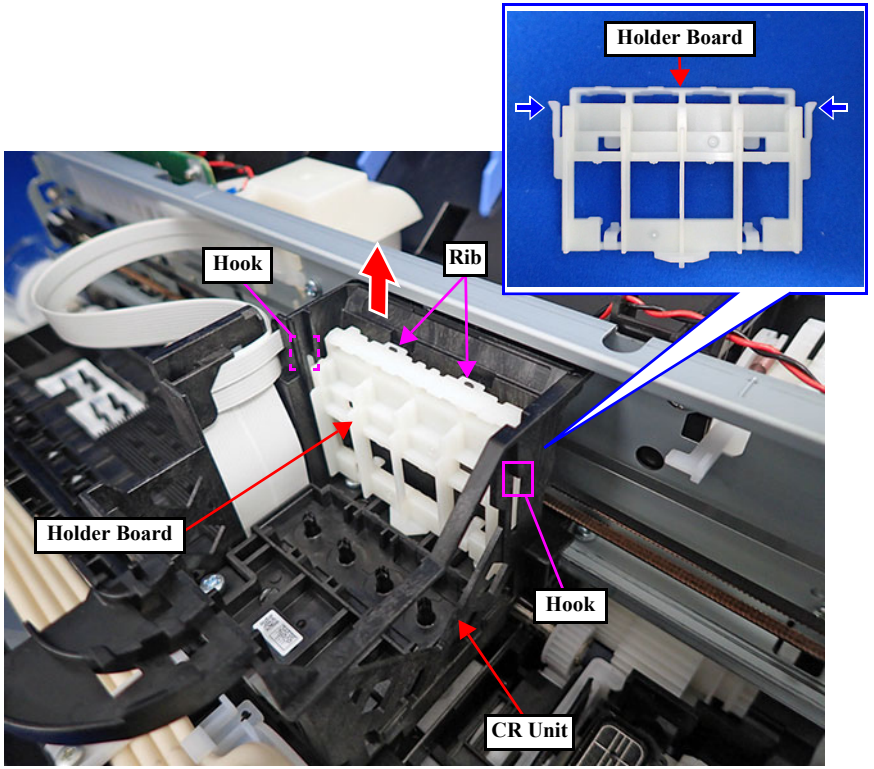


Figure 3-35. Removing the Holder Board

9. Remove the three screws and lift the Print Head.
10. Remove the Head FFC from the connector on the Print Head and remove the Print Head.

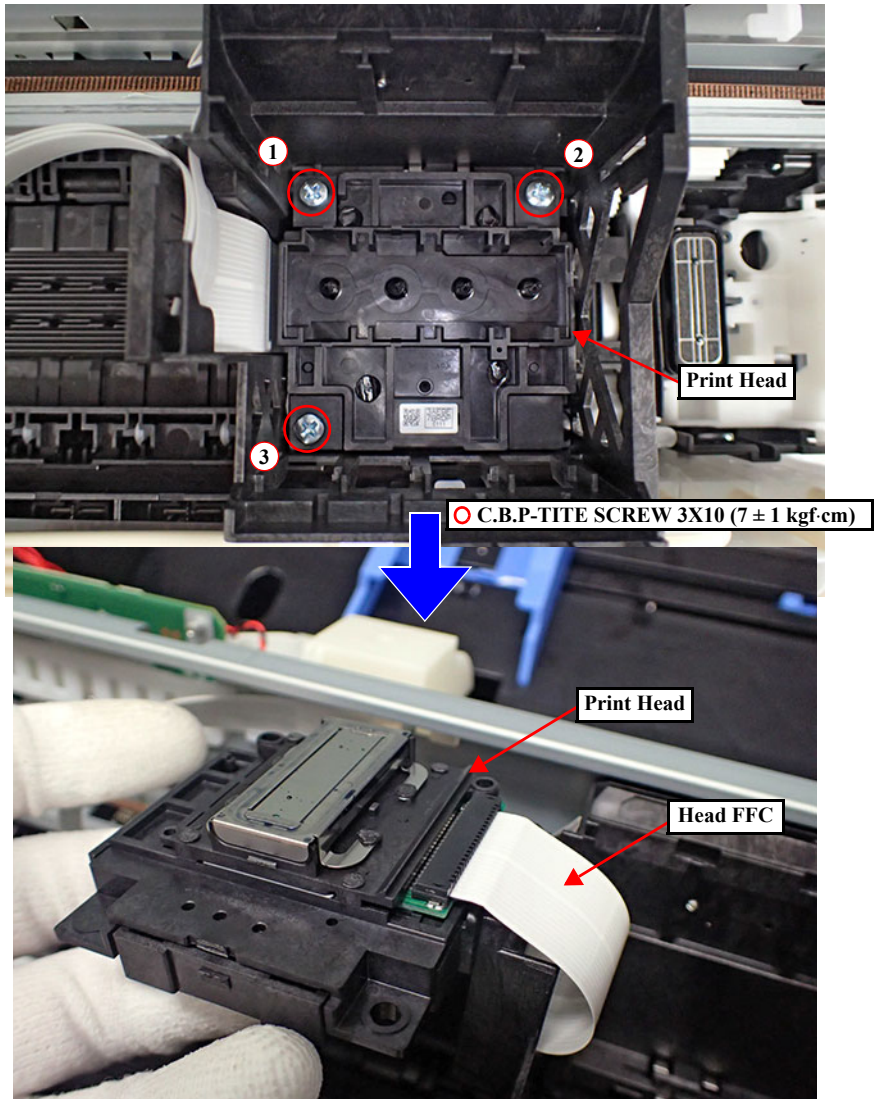


Figure 3-36. Removing the Print Head

ASSEMBLY

- **Secure the Print Head by screwing it in the order shown in Figure 3-36.**
- **Align the positioning holes on the Holder Board with the two ribs on the rear side of the CR Unit. (Figure 3-35)**
- **Make sure that the Adapter Tubes are not overlapping with each other.**

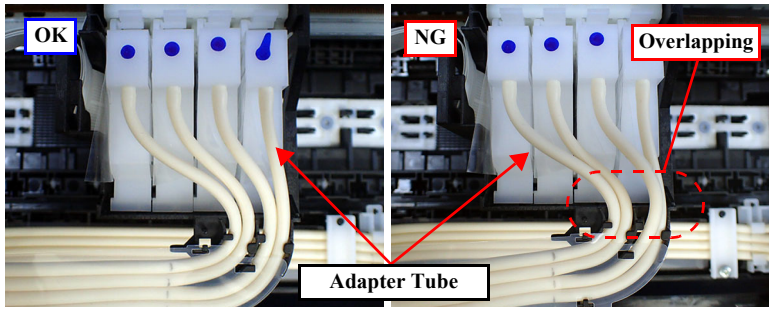


Figure 3-37. Adapter Tube (1)

- **To make it easier to connect the Adapter Tube, apply CR02 to the edge of the tube.**
- **Distinguish the adapter (BK) and the adapter (CL) by confirming the position of the rib.**
  - **Adapter (BK): for black ink**
  - **Adapter (CL): for color ink**

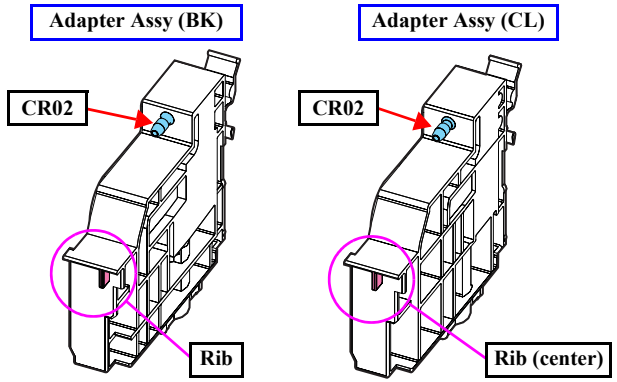


Figure 3-38. Adapter Assy

ASSEMBLY

- **Lines made when separated the tip are on the tubes for color ink.**
  When connecting the Adapter Tube to the Adapter Assy, direct each line in the correct direction referring to the figure below.

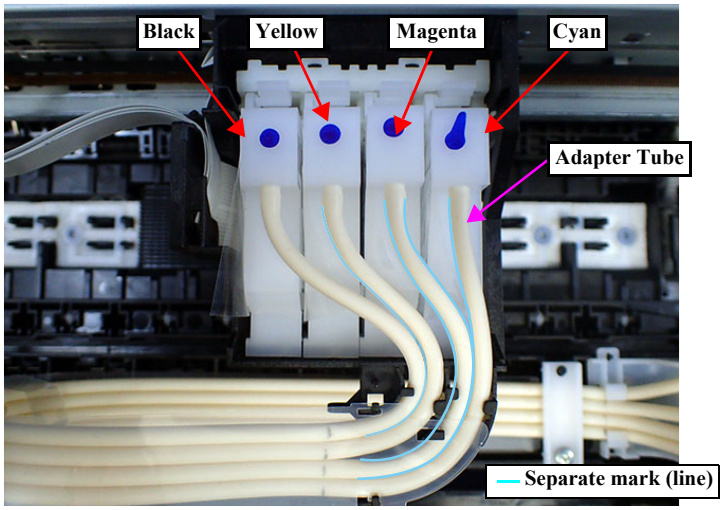


Figure 3-39. Adapter Tube (2)

- **Firmly connect the Adapter Tube to the Adapter Assy. (A gap should be 0.5 mm or less)**
- **Make sure to secure the Adapter Assy with the hook.**

3.3.3.7 Key Slot Assy

1. Remove the Porous Pad Assy. (p109)
2. Remove the Scanner Unit/ADF/SCN Unit/Housing Upper Assy. (p110)
3. Remove the Housing Right. (p116)
4. Remove the screw and remove the Plate Tube Holder Starwheel.
5. Release the Adapter Tube from the Tube Guide.
6. Remove the two screws securing the Tube Guide.
7. Disengage the two holes on the Sheet Guide Tube Support from the two dowels of the Tube Guide, and remove the Tube Guide.

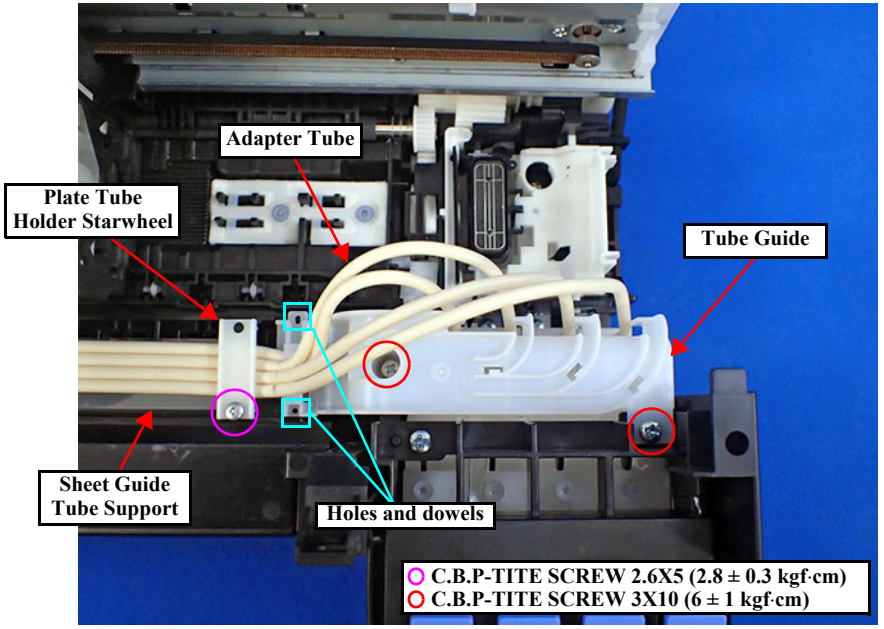

Adapter Tube
Plate Tube Holder Starwheel
Tube Guide
Sheet Guide Tube Support
Holes and dowels
C.B.P-TITE SCREW 2.6X5 (2.8 ± 0.3 kgf·cm)
C.B.P-TITE SCREW 3X10 (6 ± 1 kgf·cm)

Figure 3-40. Removing the Tube Guide

8. Open the Cover Tank.
9. Pull off the Hinge Cap Tank (x2) located over the screws in the direction of the arrow shown in the Figure 3-41.

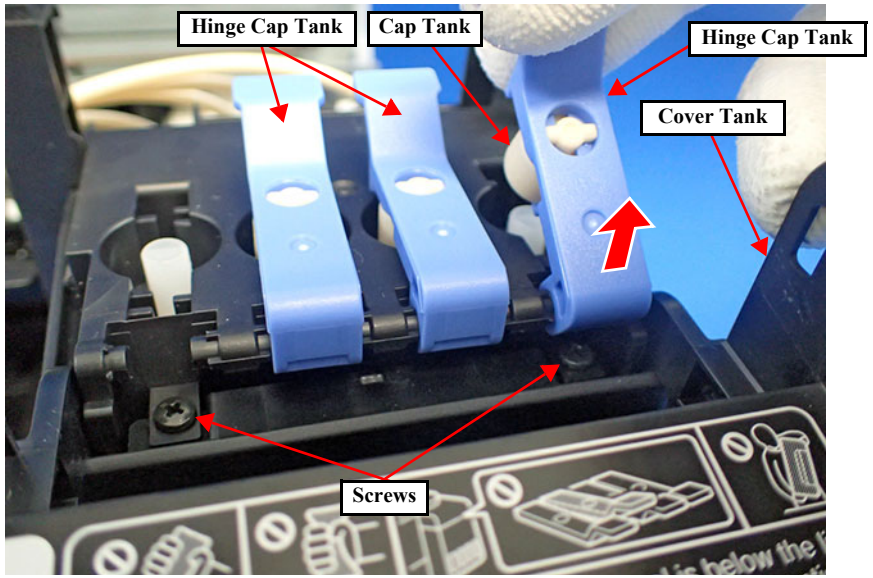


Figure 3-41. Removing the Hinge Cap Tank

10. Remove the three screws securing the Key Slot Assy.
11. Release the rib shown below by lifting the Housing Front Right slightly.
12. Lift the Key Slot Assy to release the dowel shown below.
13. Release the hook by bending the Housing Front Right slightly in the direction of the arrow and remove the Key Slot Assy together with the Cover Tank.
14. Remove the Cover Tank from the Key Slot Assy.

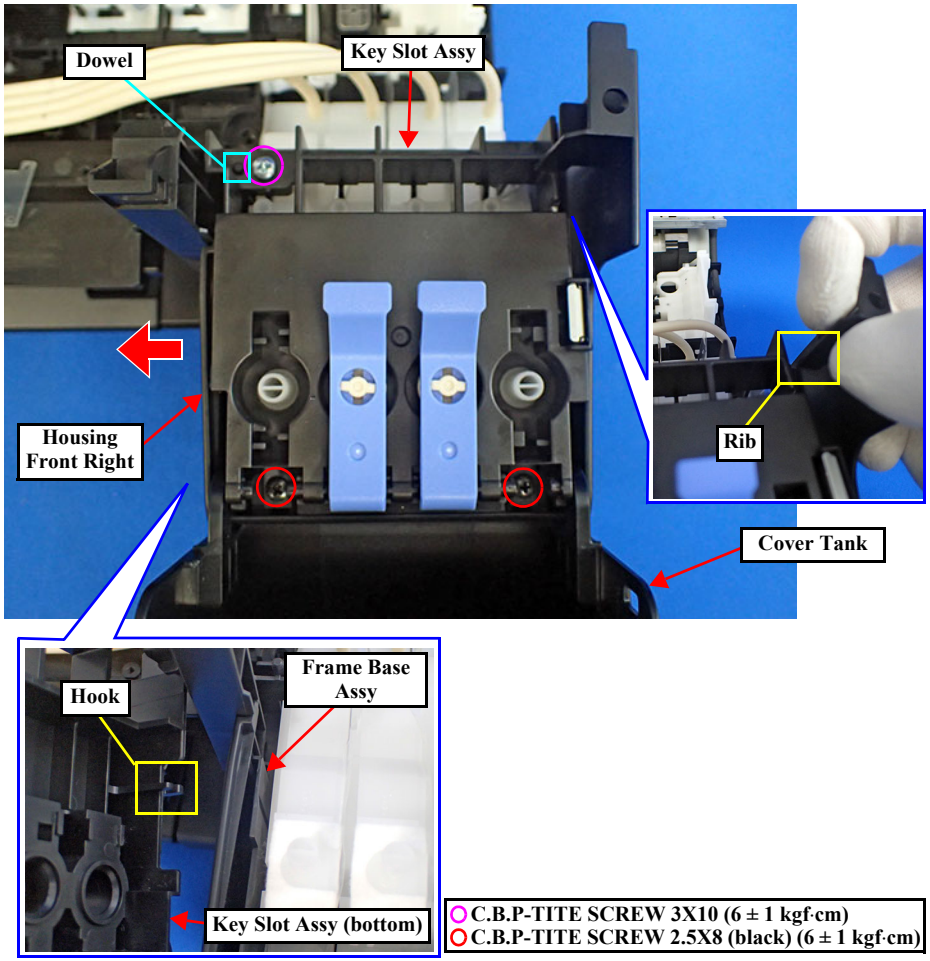


Figure 3-42. Removing the Key Slot Assy

3.3.3.8 Housing Front Right

1. Remove the Porous Pad Assy. (p109)
2. Remove the Scanner Unit/ADF/SCN Unit/Housing Upper Assy. (p110)
3. Remove the Housing Right. (p116)
4. Remove the Key Slot Assy. (p116)
5. Release the five hooks to remove the Housing Front Right.

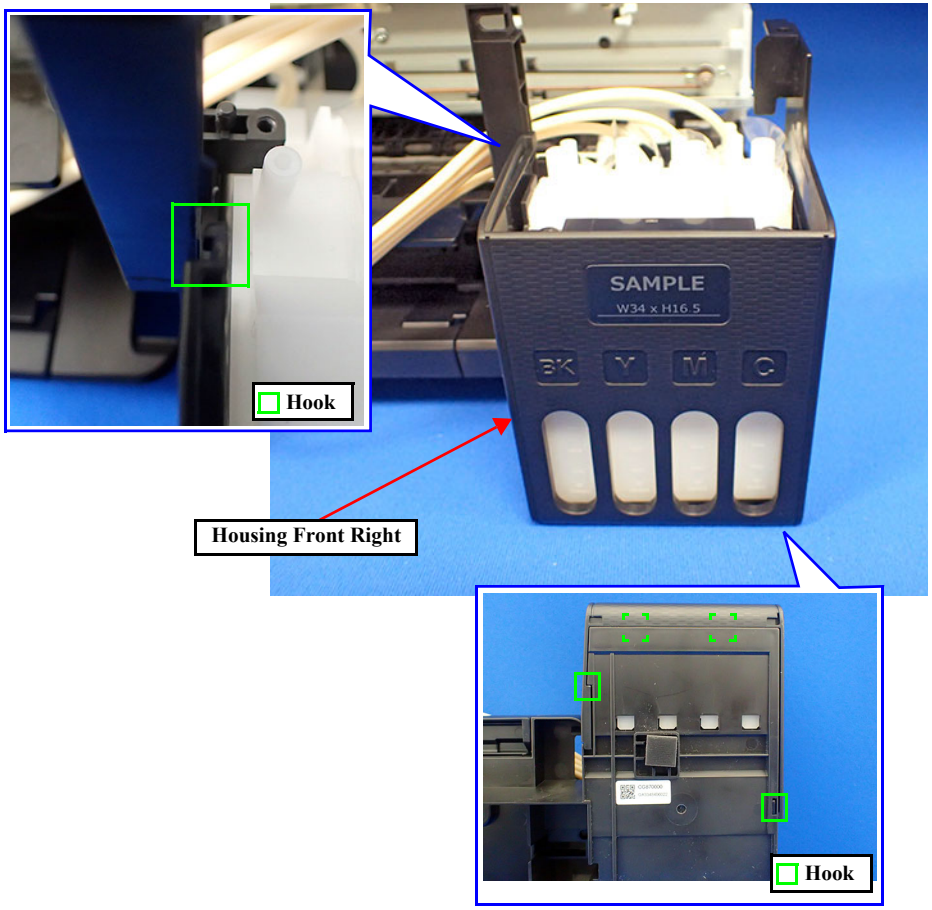


Figure 3-43. Removing the Housing Front Right

3.3.3.9 Main Board

1. Remove the Scanner Unit/ADF/SCN Unit/Housing Upper Assy. (p110)
2. Remove the Housing Left. (p117)
3. Remove the screws to remove the Frame Main Support.
   - Except for ET-4800/L5290/L5310 Series: 3 pcs
   - ET-4800/L5290/L5310 Series: 4 pcs

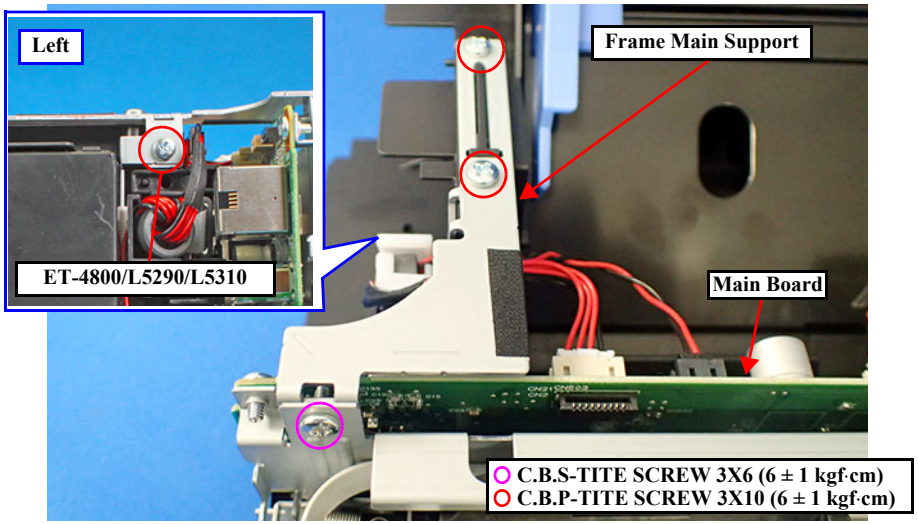


Figure 3-44. Removing the Frame Main Support

4. Disconnect all cables/FFCs from the Main Board.
5. Remove the Wi-Fi Board.
   (ET-4800/L5290/L5310 Series and ET-2400/ET-2810/ET-2860/L3250/ L3270 Series and ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Seriesonly)
6. Remove the Paper Support.
7. Remove the three screws, and remove the Main Board in the direction of the arrow.

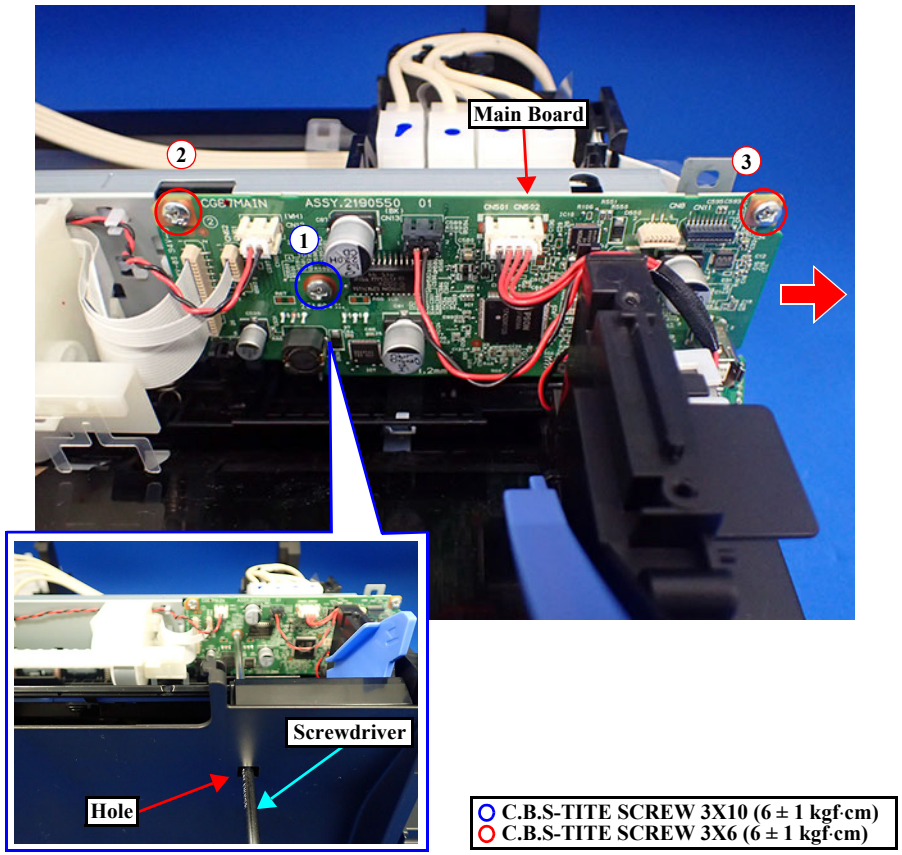


Figure 3-45. Removing the Main Board

ASSEMBLY

- **Screw in the order shown in Figure 3-45.**
- **When tightening the screw 1, insert the screwdriver through the hole on the Frame Base Assy and Hopper. (Figure 3-45)**
- **When assembling the Main Board, the grooves of the Main Board are aligned to the grooves of the Main Frame Assy.**

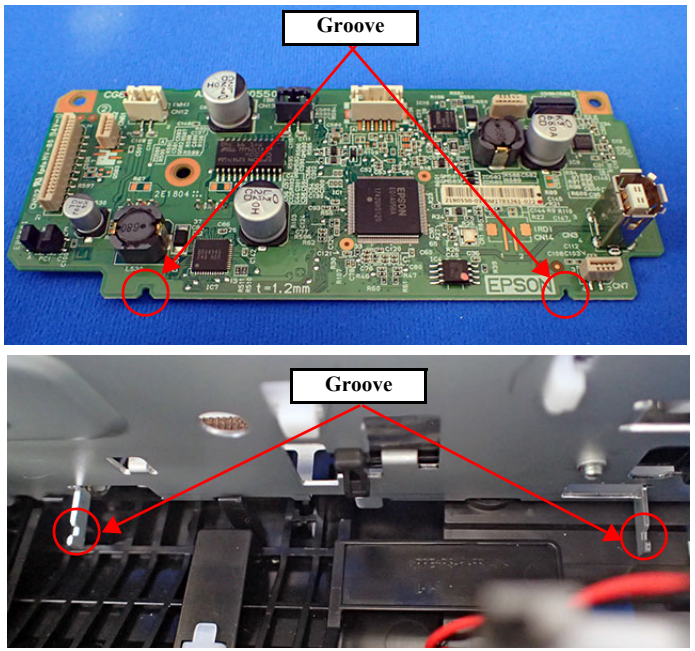


Figure 3-46. Grooves

3.3.3.10 Tank Supply Ink Assy

1. Remove the Porous Pad Assy. (p109)
2. Remove the Scanner Unit/ADF/SCN Unit/Housing Upper Assy. (p110)
3. Remove the Housing Right. (p116)
4. Remove the Key Slot Assy. (p116)
5. Remove the Housing Front Right. (p124)

CAUTION

Observe the precautions below during the following procedure.

- **When disassembling/assembling the Tank Supply Ink Assy, prepare a waste cloth or the like not to soil surroundings with ink.**
- **Do not hold the film section of the Tank Supply Ink Assy.**
- **To prevent ink leakage, replace the Cap Tank from the Cap Hinge Tank on the Key Slot Assy (Figure 3-41) to the ink supply hole of the Tank Supply Ink Assy.**

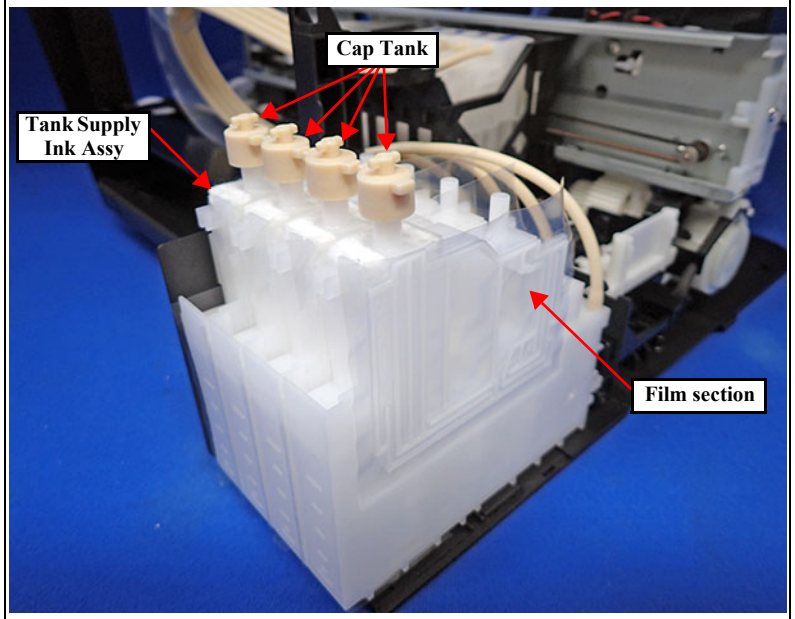


Figure 3-47. Tank Supply Ink Assys

6. Release the CR Lock and move the CR Unit to the center.
7. Remove the screw that securing each of the Tank Supply Ink Assys.
8. Slide the Tank Supply Ink Assy in direction of the arrow to release the hook on the bottom and remove it from the Frame Base Assy.

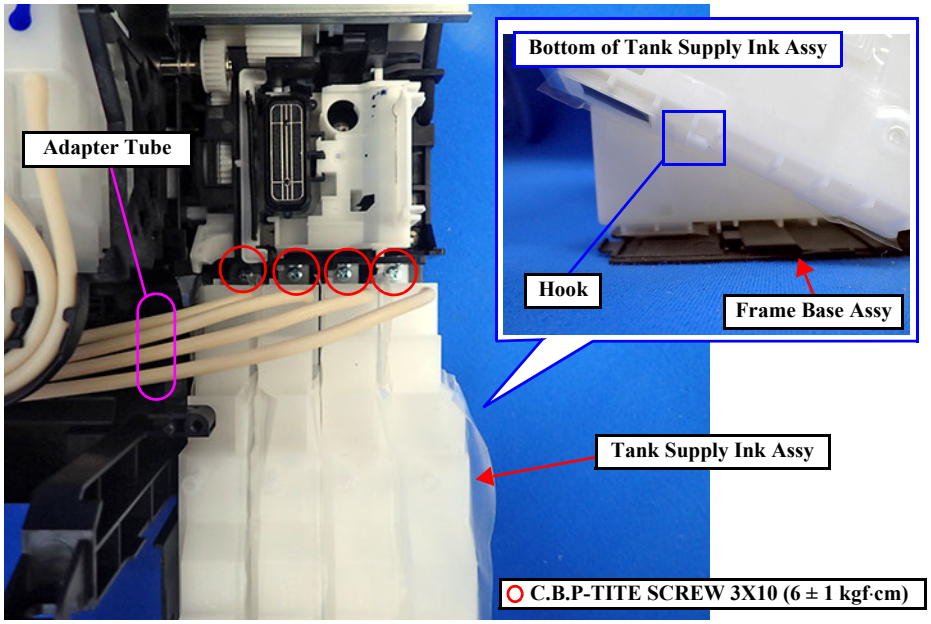


Figure 3-48. Removing the Tank Supply Ink Assys

9. Remove the Adapter Tube from the Tank Supply Ink Assy.

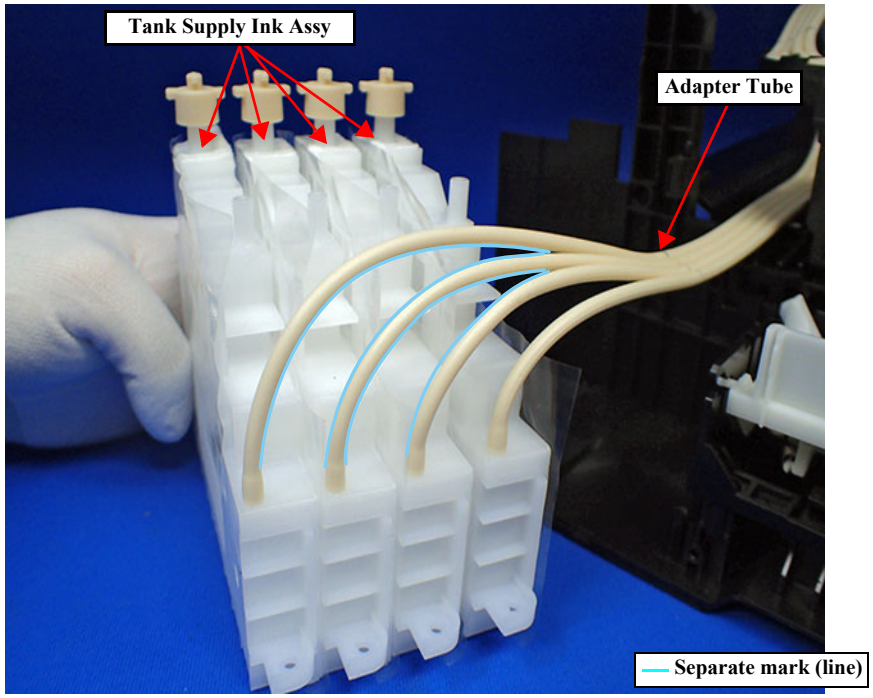


Figure 3-49. Removing the Adapter Tube

ASSEMBLY

- **Lines made when separated the tip are on the tubes for color ink.**
  When connecting the Adapter Tube to the adapter, direct each line in the correct direction referring to Figure 3-49.
- **Firmly connect the Adapter Tube to the adapter. (A gap should be 0.5 mm or less)**
- **Make sure to secure the adapter to the Frame Base Assy with the hook.**

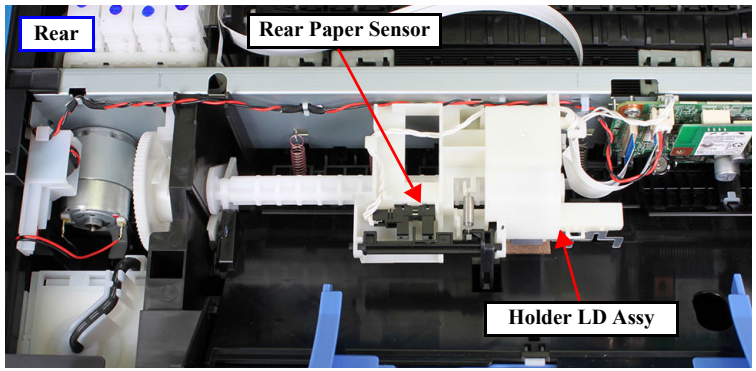
3.3.3.11 PGU Right Assy/PGU Center Assy

1. Remove the Scanner Unit/ADF/SCN Unit/Housing Upper Assy. (p110)
2. Remove the Housing Left. (p117)
3. Remove the Main Board. (p124)
4. Remove the PE Sensor Lever Spring.

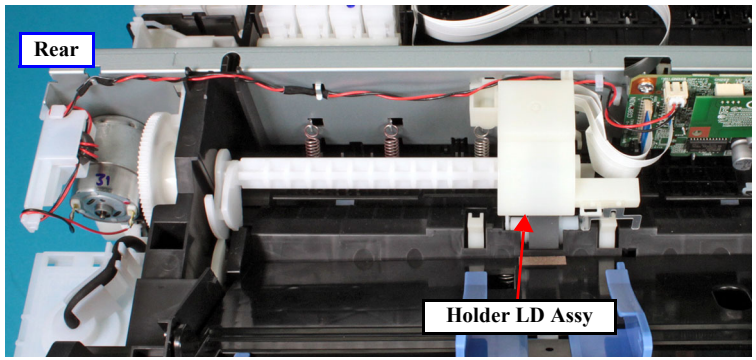
CHECK

Shape of the Holder LD Assy differs between ET-4800/L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series and ET-2400/ET-2810/ET-2860/L3250/L3270 Series/L3210/L3230 Series/L3200 Series/L1210/L1230 Series/ET-1810/L1250/L1270 Series, but the procedure for removing the Holder LD Assy is the same.

ET-4800/L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/L3260/ L3280 Series



ET-2400/ET-2810/ET-2860/L3250/L3270 Series/L3210/L3230 Series/L3200 Series/L1210/L1230 Series



5. Remove the screw securing the Holder LD Assy.
6. Slide the Holder LD Assy in the direction of the arrow while pressing the tab and remove it.

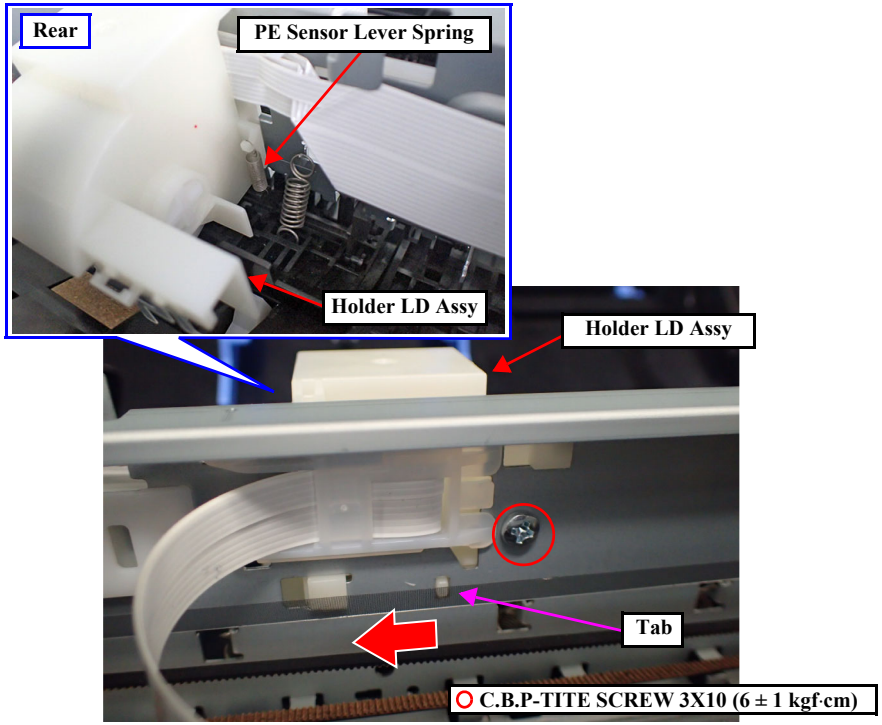


Figure 3-50. Removing the Holder LD Assy

7. Pull out the Shaft LD Assy in the direction of the arrow while releasing its two hooks.

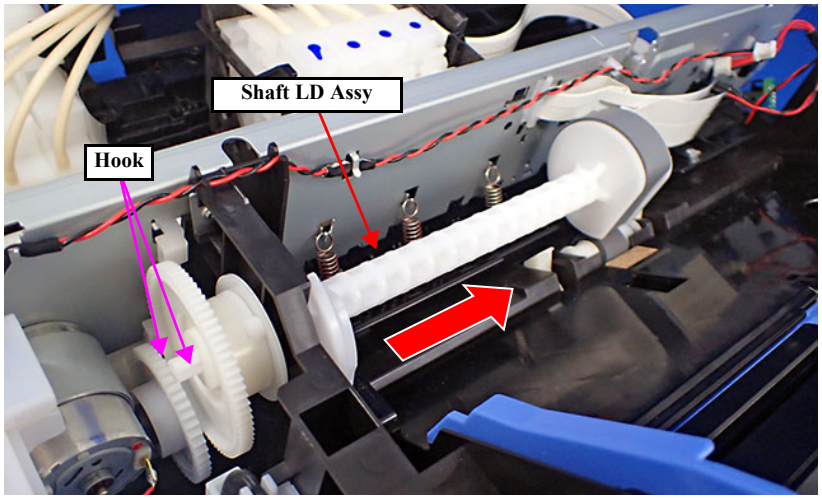


Figure 3-51. Removing the Shaft LD Assy

CAUTION

- **In the next step, be careful not to lose the Extension Spring 0.137 since it may come off from the ASF Roller Clutch Assy.**
- **When attaching the Extension Spring 0.173 to the ASF Roller Clutch Assy, make sure the spring is attached as shown below.**

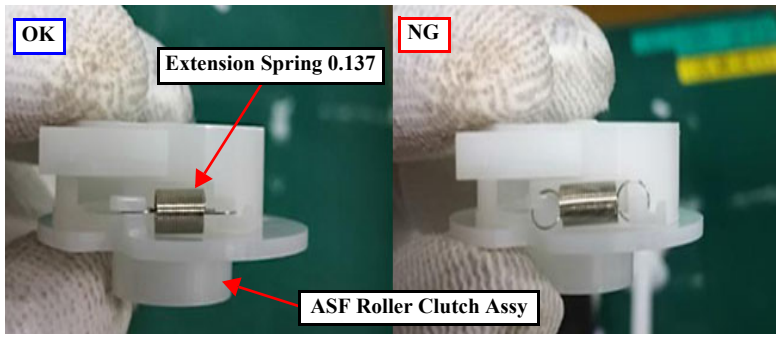


Figure 3-52. Spring of the ASF Roller Clutch Assy

8. Remove the ASF Roller Clutch Assy from the Frame Base Assy.

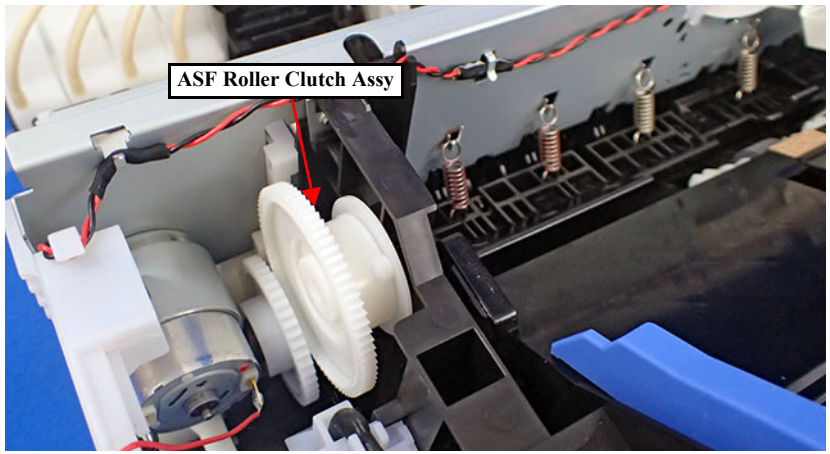


Figure 3-53. Removing the ASF Roller Clutch Assy

9. Release the two dowels as shown below to remove the ASF Hopper Assy from the Frame Base Assy.

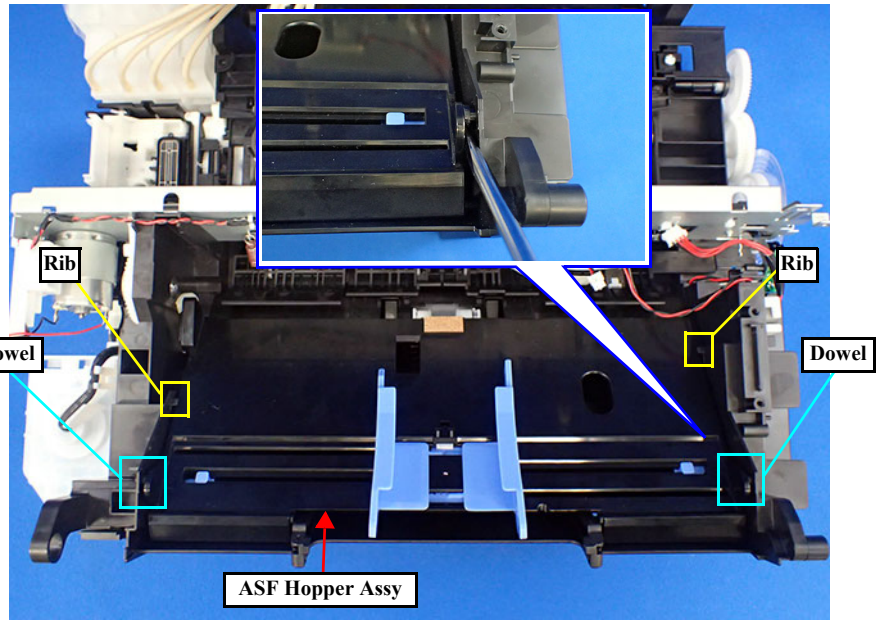


Figure 3-54. Removing the ASF Hopper Assy

ASSEMBLY

■ **Before installing the ASF Hopper Assy to the Frame Base Assy, engage the two Hopper Spring with the protrusions on the ASF Hopper Assy as shown below.**

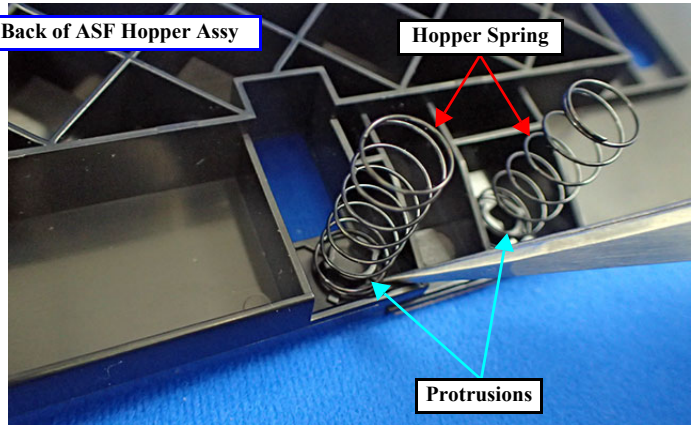


Figure 3-55. Hopper Spring

■ **When installing the ASP Hopper Assy, insert and set the ASF Hopper Assy under the ribs in Figure 3-54.**

10. Remove the two PGU Center Springs and the two PGU Right Springs from the Main Frame.
11. Release the three hooks and remove the PGU Center Assy and the PGU Right Assy toward the rear side.

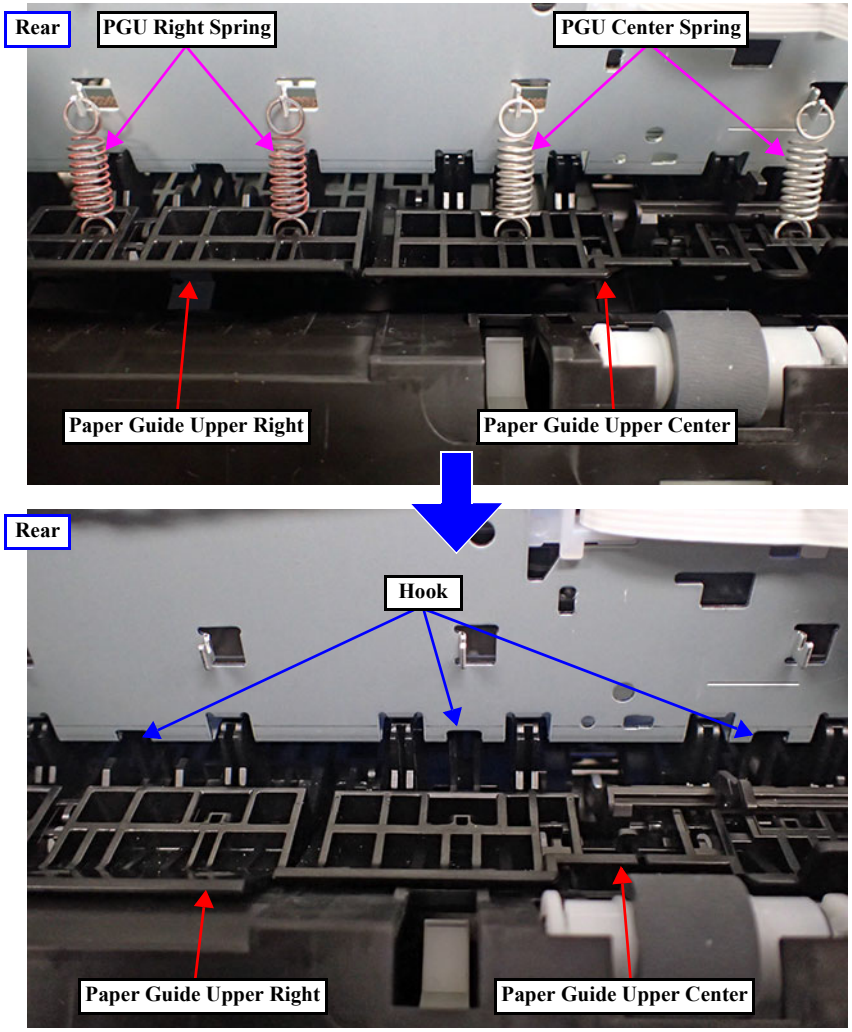


Figure 3-56. Removing the PGU Center Assy and PGU Right Assy

ASSEMBLY

- Attach the Shaft LD Assy with the spring on the ASF Roller Clutch Assy facing to the bottom. (Figure 3-52)

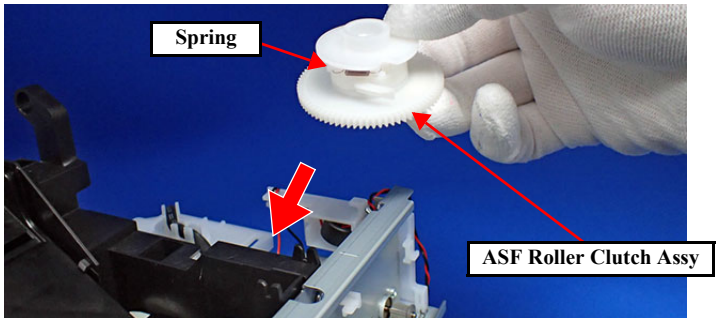


Figure 3-57. Installing the ASF Roller Clutch Assy

- Attach the LD Roller with its flat surface facing to the rear side.

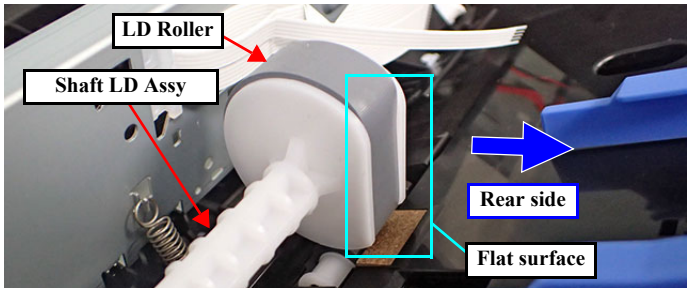


Figure 3-58. Installing the Shaft LD Assy

- When attaching the Holder LD Assy, be careful not to let the CR Motor Cable and FFCs get caught between parts.

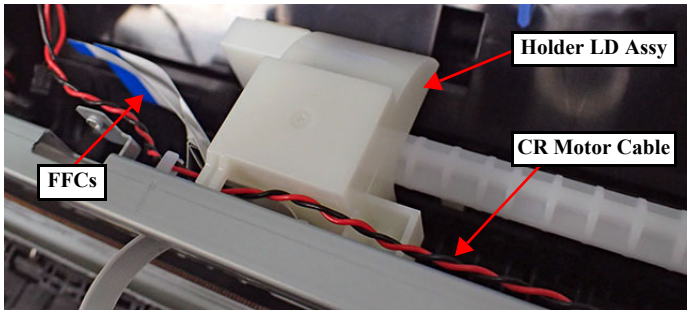


Figure 3-59. Installing the Holder LD Assy

ASSEMBLY

- There is a mounting direction for "LD Roller".Also, since there are different types, check which type it is.
- Dip lower side of [LD ROLLER] into Alcohol 95%.

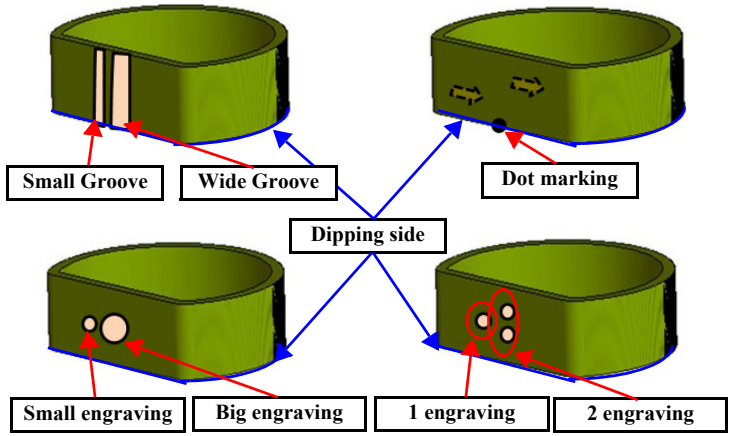


Figure 3-60. LD Roller Type

- Install the LD roller so that [Dipping side] is the long side of Shaft LD. Also, the above mark should be in the center of the flat surface.

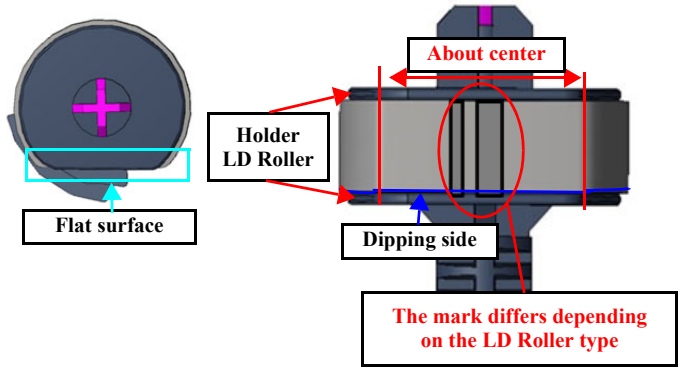


Figure 3-61. Installing the LD Roller

- No wavy condition of [LD Roller] and no overlapped into the step profile of [Holder LD Roller].

3.3.3.12 PGU Left Assy

1. Remove the Scanner Unit/ADF/SCN Unit/Housing Upper Assy. (p110)
2. Remove the Housing Left. (p117)
3. Remove the Porous Pad Assy. (p109)
4. Remove the Housing Right. (p116)
5. Remove the Main Board. (p124)
6. Remove the Holder LD Assy. (p128)
7. Remove the Shaft LD Assy. (p129)
8. Remove the CR Belt from the CR Driven Pulley and the Pinion gear of the CR Motor Assy.
9. Remove the screw to remove the CR Driven Pulley.
10. Remove the CR Scale.

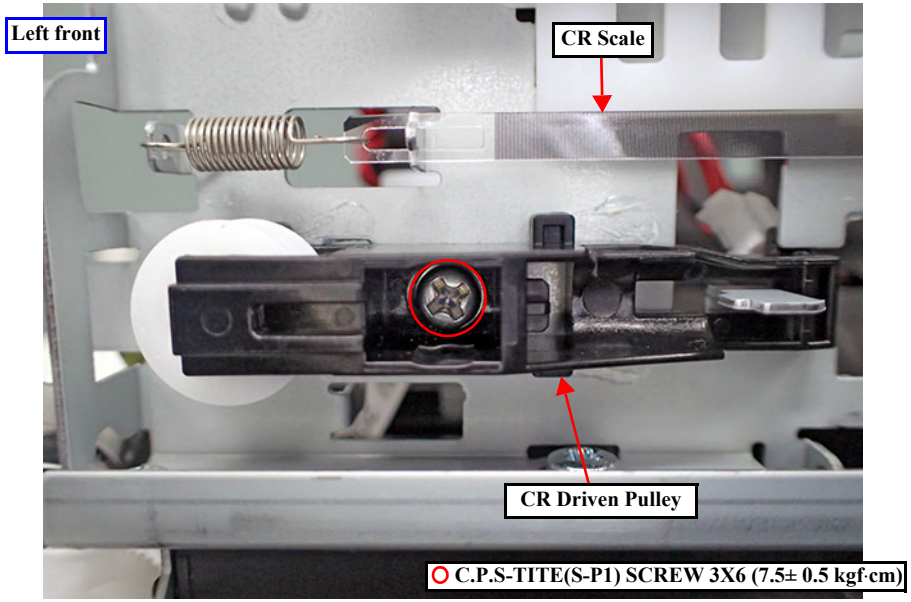


Figure 3-62. Removing the CR Driven Pulley

11. Release the dowel of the Cover Transistor from the rear, and slide the Cover Transistor upward to remove it.

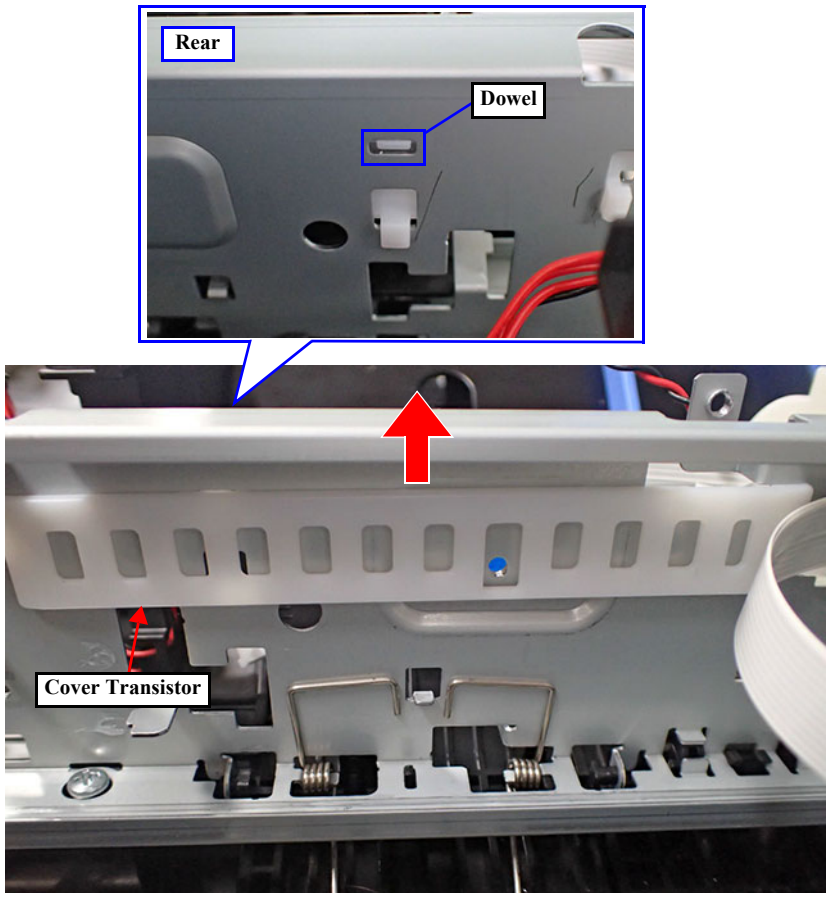


Figure 3-63. Removing the Cover Transistor

12. Remove the four screws, and then remove the Main Frame Assy.

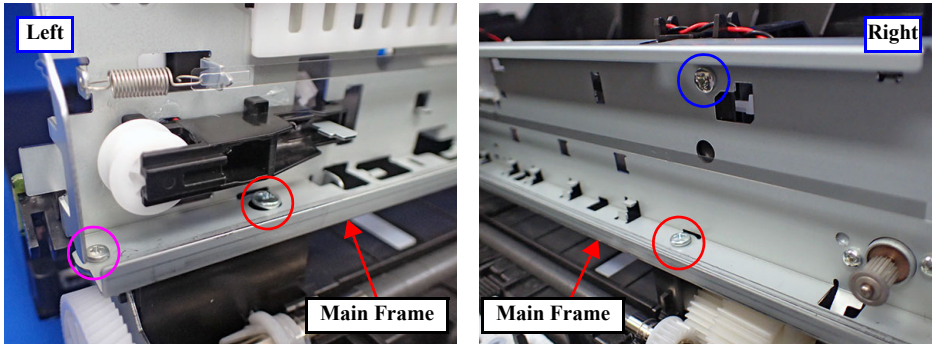


Figure 3-64. Removing the Main Frame Assy

13. Remove the PGU Left Spring L and PGU Left Spring R.
14. Release the two dowels on the PGU Left Assy from the holes on the Main Frame Assy and remove the PGU Left Assy.

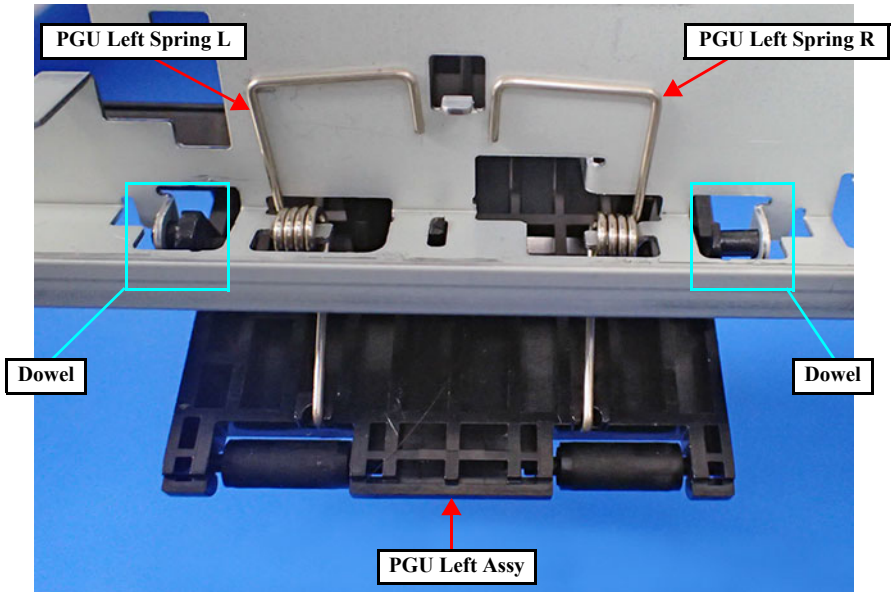


Figure 3-65. Removing the PGU Left Assy

ASSEMBLY

■ **Attach the PGU Left Spring L/R in the order given below.**

1. **Attach the coiled section of the spring to the tab.**
2. **Secure the arms of the spring with the rib on the Main Frame.**
3. **Set the legs of the spring in the hole on the PGU Left Assy.**

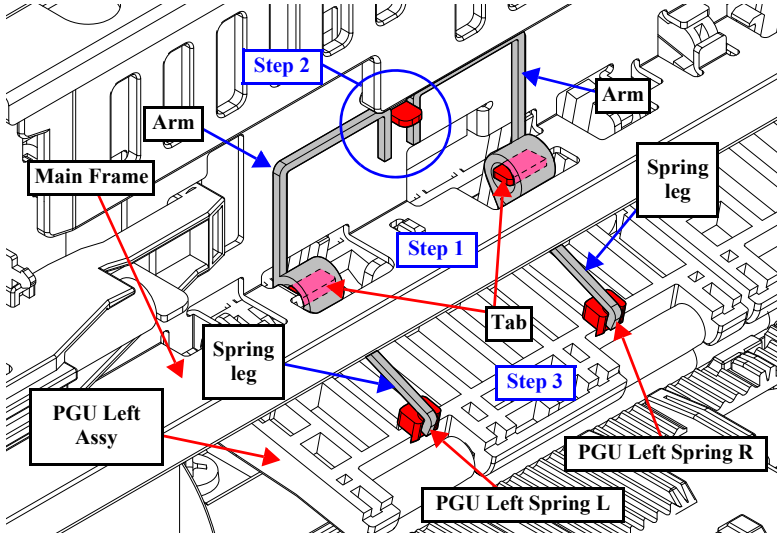
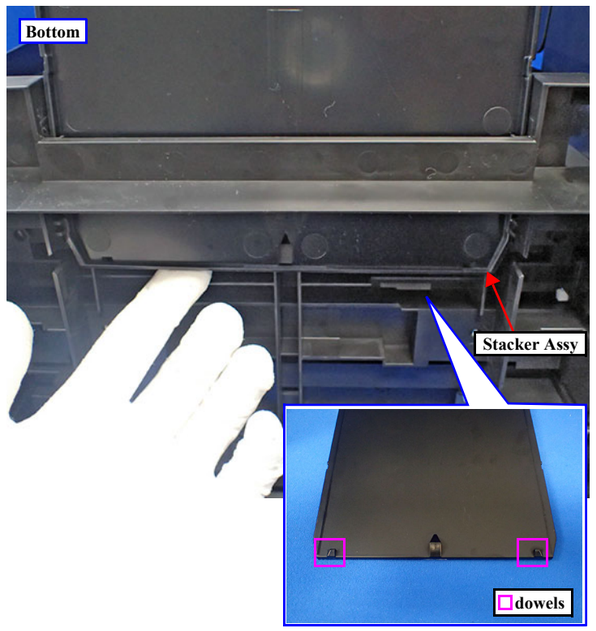


Figure 3-66. Installing the PGU Left Spring L/R

3.4 Detailed Disassembly/Reassembly Procedure for each Part/Unit

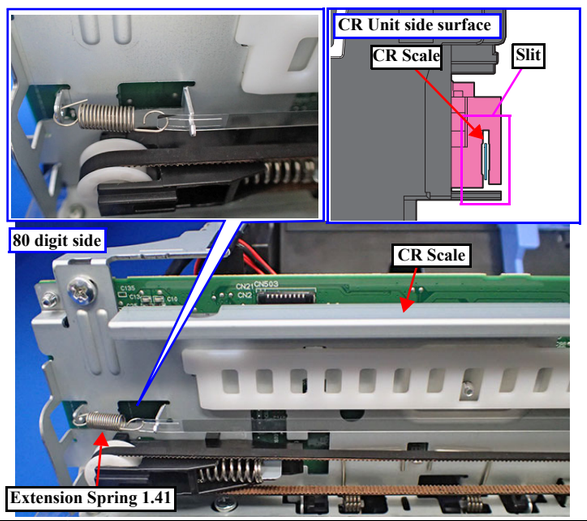
Stacker Assy



TOOL

When removing Stacker Assy, pull it out to the front side of the printer and release two dowels shown above toward bottom.

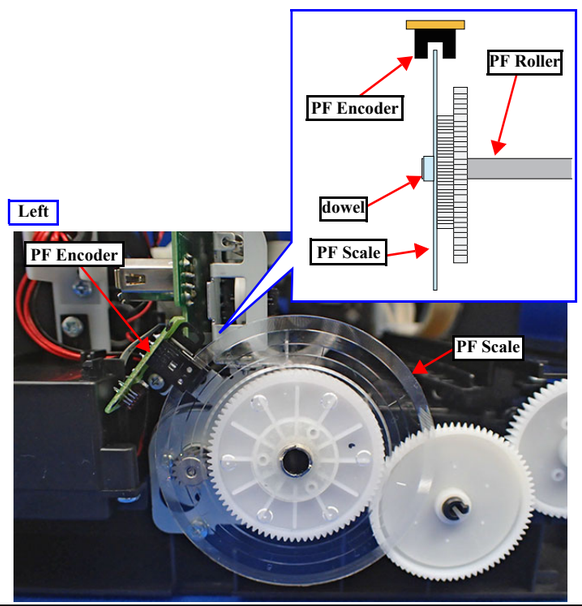
CR Scale & Spring



ASSEMBLY

- Attach CR Scale with its black section facing to the upside of 80 digit side and insert it through slit on CR Encoder Sensor.
- Hook the longer leg of Extension Spring 1.41 to CR Scale and the other leg to the Main Frame.
- After attaching CR Scale, move CR Unit by pressing its side to confirm that the scale does not contact with FFC or other components.

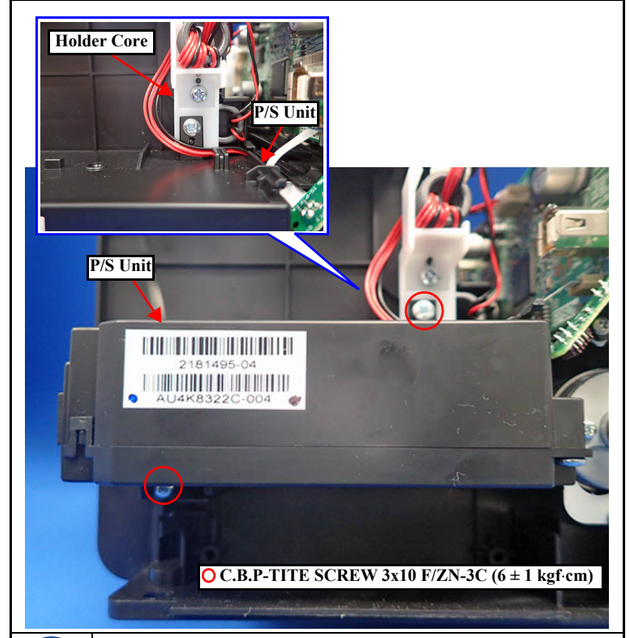
PF Encoder/PF Scale



ASSEMBLY

- Attach PF Scale with its dowel facing outward.
- After attaching PF Encoder, confirm that PF Scale and PF Encoder is not touching each other.

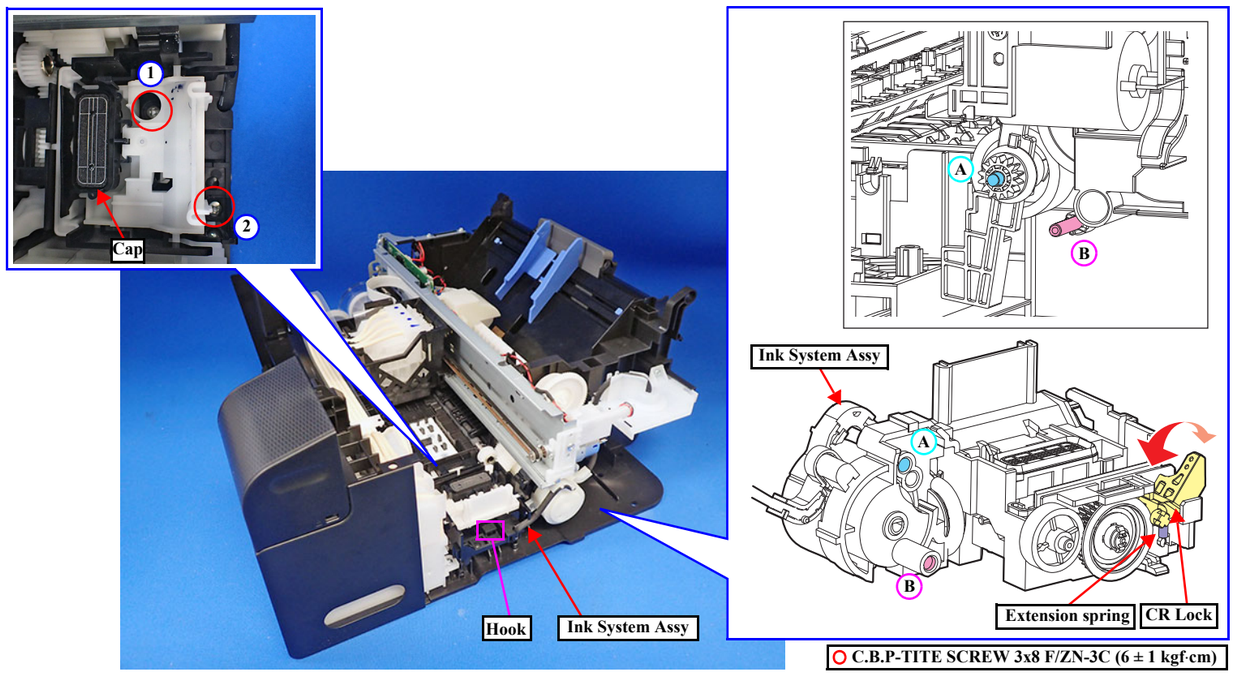
PS Unit (except for ET-4800/L5290/L5310 Series)



ASSEMBLY

When installing the PS Unit, attach the Holder Core in advance.

Ink System Assy (1)

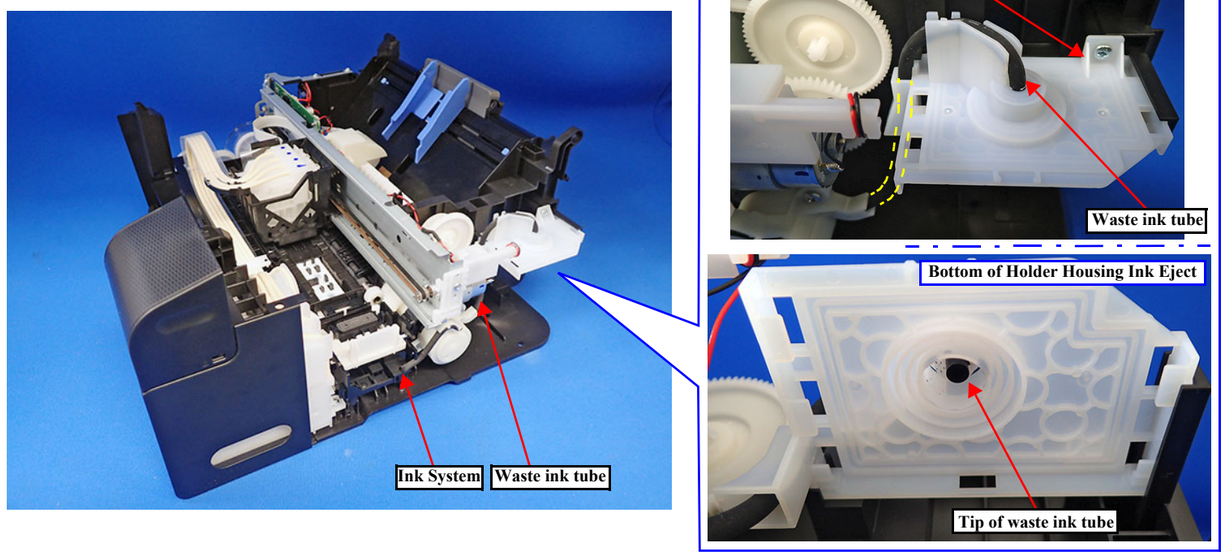


C.B.P-TITE SCREW 3x8 F/ZN-3C (6 ± 1 kgf·cm)

ASSEMBLY

- Attach Ink System Assy aligning holes and shafts of (A)/(B) shown above, and secure it with hook, then screw it in the order given above.
- After attaching Ink System Assy, move CR Lock in the direction of the arrow to confirm extension spring is hooked.

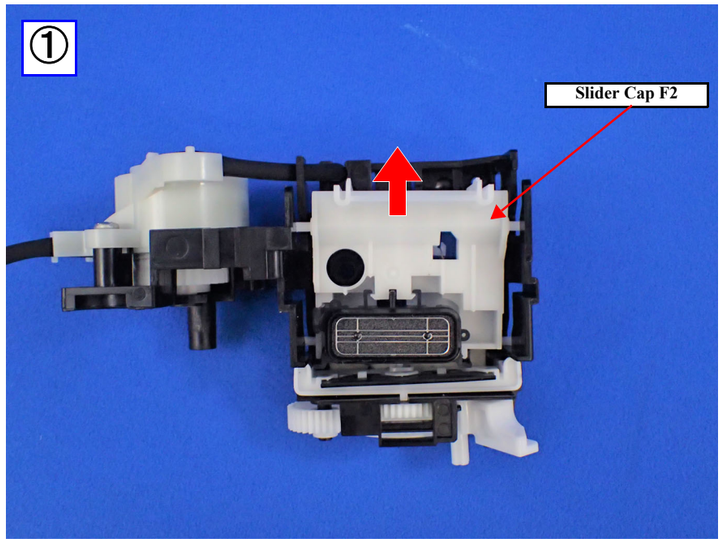
Ink System Assy (2)

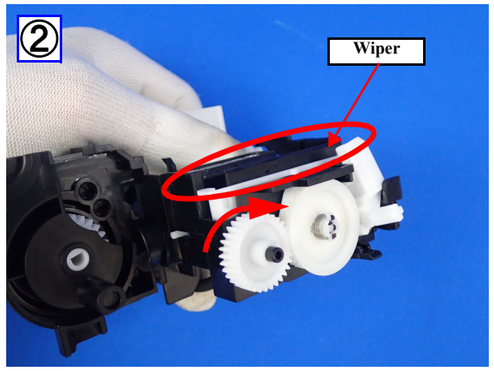


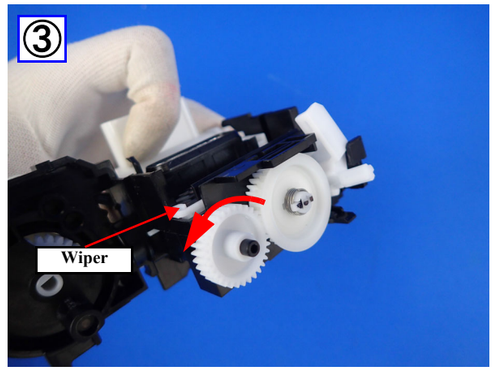
ASSEMBLY

- Route waste ink tube as shown above.
- Be careful not to let the tip of waste ink tube go lower than the bottom edge of Holder Housing Ink Eject.

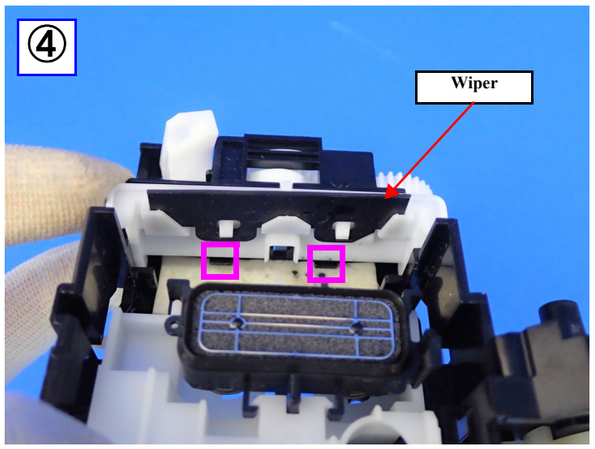
Porous Pad Ink Eject Lower

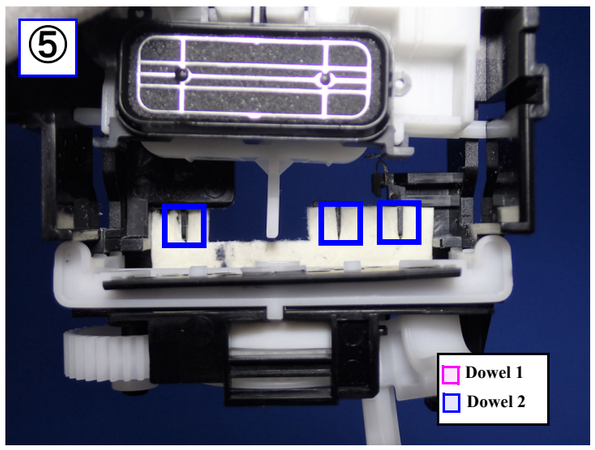






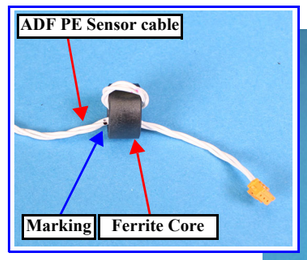
Check Point

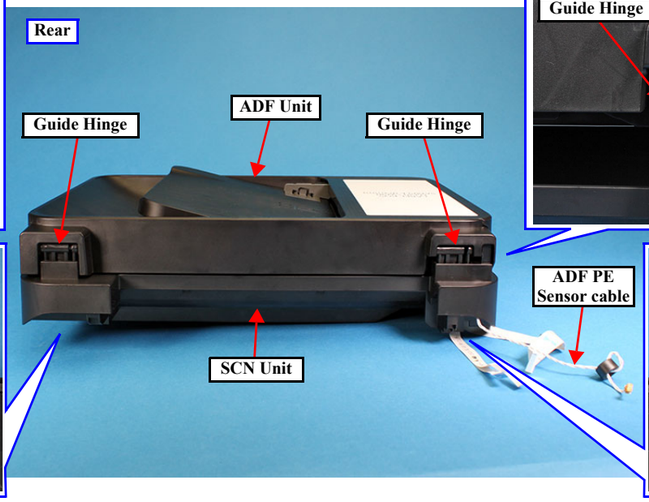


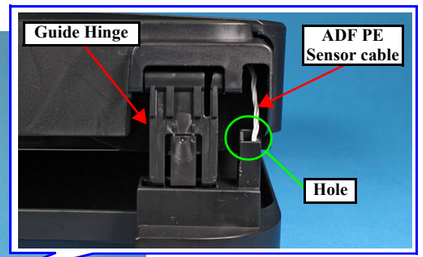


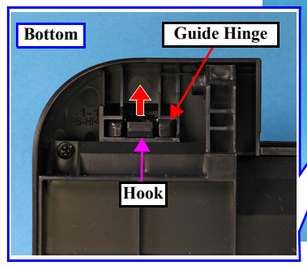
ASSEMBLY	Attach the Porous Pad Ink Eject Lower in the procedure given below. 1. While pulling the slider cap F2 toward the arrow ①, turn the gear toward the arrow ② and raise the wiper. 2. Attach the Porous Pad Ink Eject Lower to IS Unit with tweezers. 3. While pulling the slider cap F2 toward the arrow ①, turn the gear toward the arrow ③ and lower the wiper.
CHECK	When attach the Porous Pad Ink Eject Lower, check Point given below. ・The Porous Pad Ink Eject Lower is Within the dowel 1 of ④. ・The Porous Pad Ink Eject Lower is firmly fitted to the dowel 2 of ⑤.

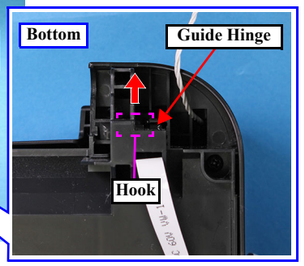
ADF Unit (ET-4800/L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series)





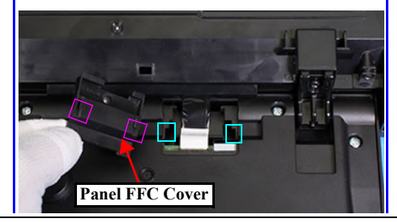






TOOL	Remove the ADF Unit in the procedure given below. 1. Remove the ferrite core from the ADF PE Sensor Cable. 2. Turn over the ADF/SCN Assy. 3. Disengage the hooks of the Hinge Guide by pushing it in the direction of the arrow with a flathead screwdriver or the like. 4. Remove the ADF Unit while pulling out the ADF PE Sensor cable from the hole on the SCN Unit.
ASSEMBLY	After attaching the ADF Unit to the SCN Unit, align the ferrite core with the marking on the ADF PE Sensor cable, and then wind the ADF PE Sensor cable around the ferrite core once.

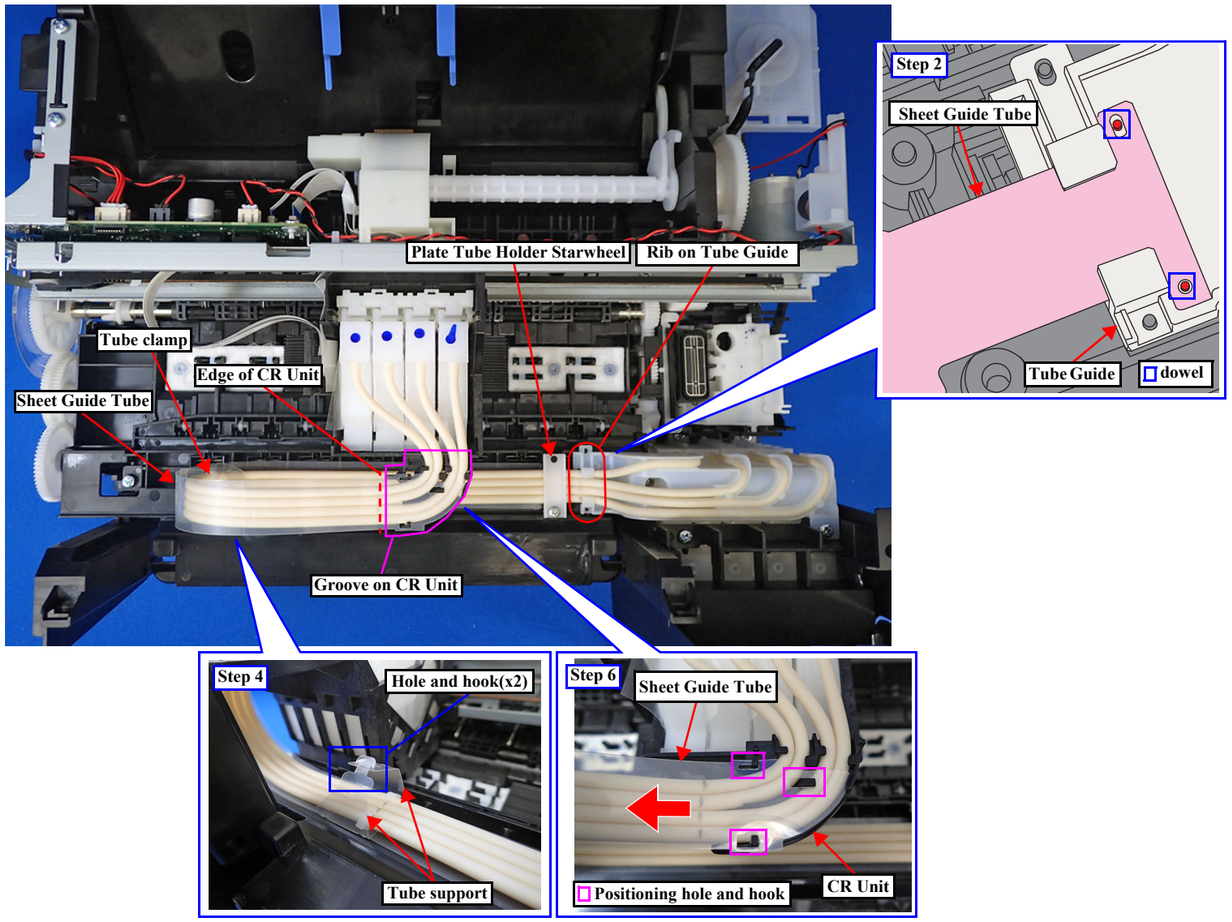
Panel FFC Cover (ET-4800/L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series)

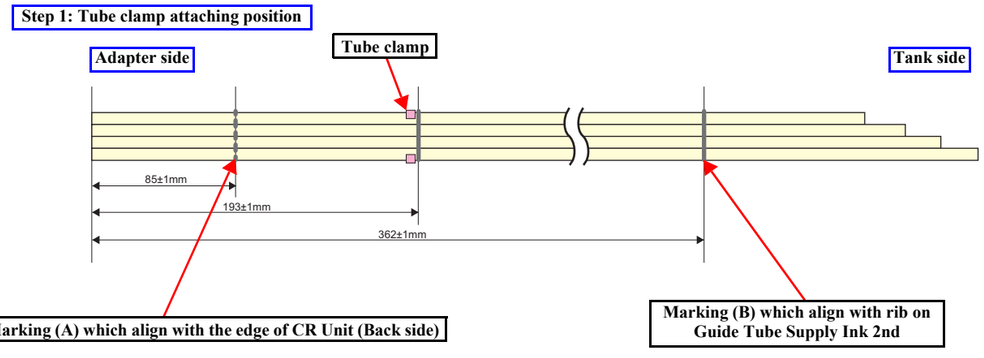


TOOL	Remove the Panel FFC Cover in the procedure given below. 1. Slightly lift the Panel FFC Cover as shown above with a precision screwdriver or the like. 2. Slide the Panel FFC Cover in the direction of the arrow to remove it.
ASSEMBLY	When attaching the Panel FFC Cover, align the hooks on the bottom of it with the ribs on the Panel Unit.

Confid

Adapter Tube/Sheet Guide Tube Support



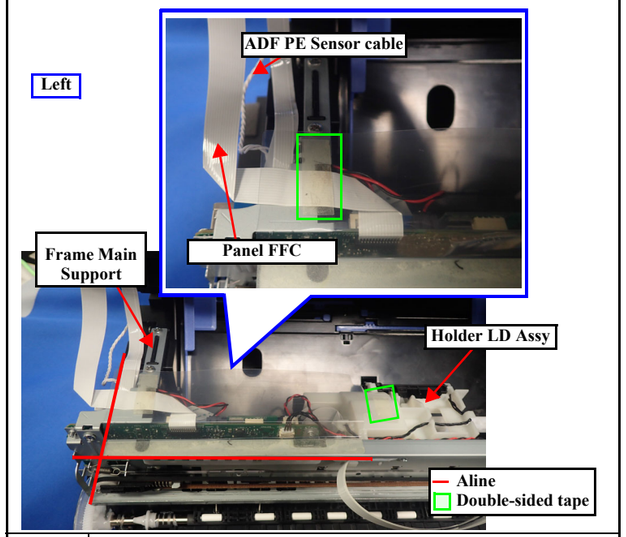

Step 1: Tube clamp attaching position
Adapter side
Tube clamp
Tank side
85±1mm
193±1mm
362±1mm
Marking (A) which align with the edge of CR Unit (Back side)
Marking (B) which align with rib on Guide Tube Supply Ink 2nd

ASSEMBLY

Attach Adapter Tube, Tube clamp, Sheet Guide Tube in the procedure given below.

1. Attach Tube clamps aligning with the marking on Adapter Tube as shown above.
2. Align positioning hole on Sheet Guide Tube with two dowels on Guide Tube.
3. Attach Adapter Tube to Guide Tube Supply Ink 2nd while directing the opening section of tube clamp to Sheet Guide Tube.
4. Bind Adapter Tube with tube support on Sheet Guide Tube and secure it by inserting hook on the end of tube support to hole on tube support.
5. Connect Adapter Tube to Adapter Assy (p 122).
6. Align marking (A) on Adapter Tube shown above with the edge of CR Unit and secure Adapter Tube in groove on CR Unit.
7. Engage three positioning holes on Sheet Guide Tube with three hooks on CR Unit, slide it in the direction of the arrow and secure them.

Cover Main Board



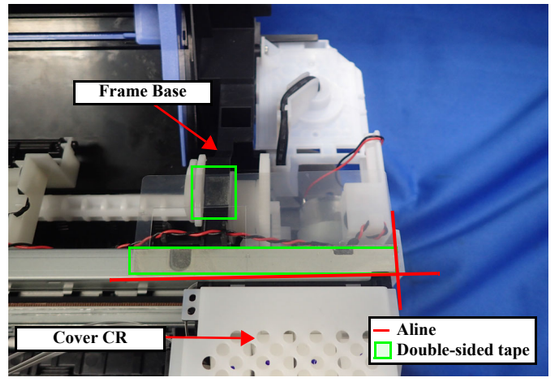
ASSEMBLY

Attach the Cover Main Board as shown above.

CAUTION

When you remove the Cover Main Board once, the adhesive strength of the double-side tape will drop, so when change the Cover Main Board, either replace it with a new Cover Main Board, or change the double-side tape.

Cover CR Motor



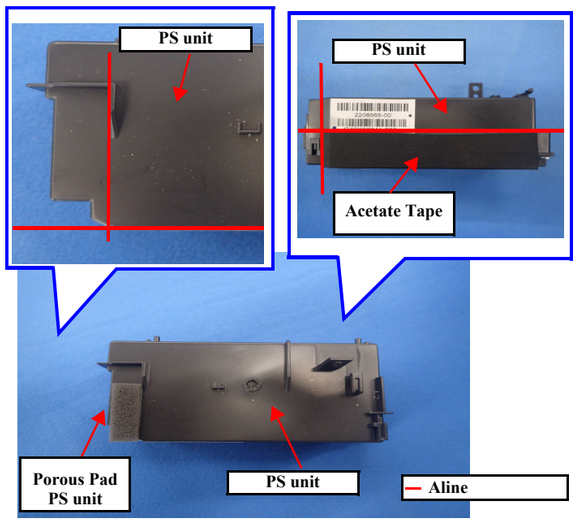
ASSEMBLY

Attach the Cover Main Board as shown above.

CAUTION

When you remove the Cover Main Board once, the adhesive strength of the double-side tape will drop, so when change the Cover Main Board, either replace it with a new Cover Main Board, or change the double-side tape.

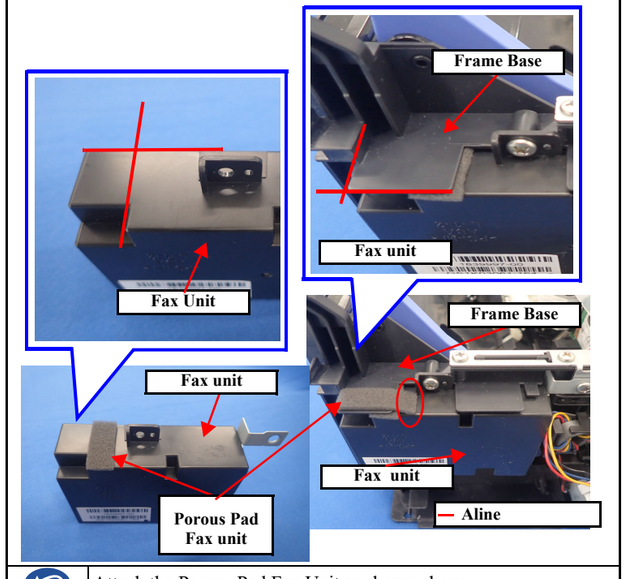
Porous Pad/Acetate Tape - PS Unit



ASSEMBLY

- Attach the Porous Pad PS Unit as shown above.
- Porting Acetate Tape to PS Unit as shown above.

Porous Pad Fax Unit(ET-4800/L5290/L5310 Series Only)

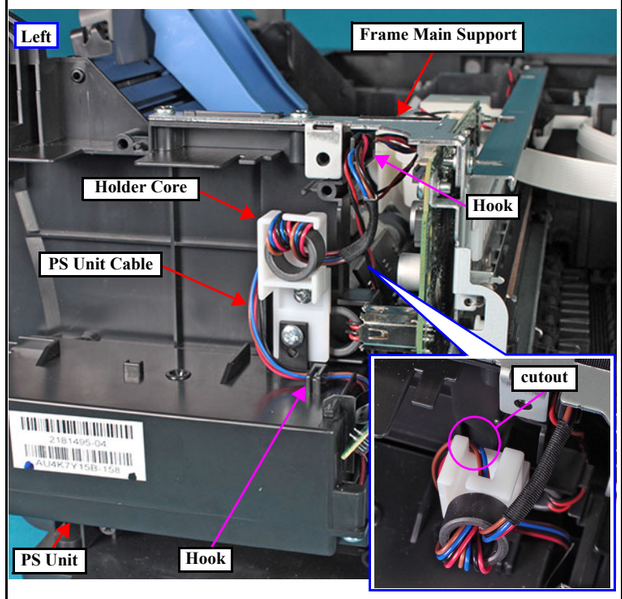


ASSEMBLY

Attach the Porous Pad Fax Unit as shown above.
Porous Pad in the red circle must stick on the Fax Unit.

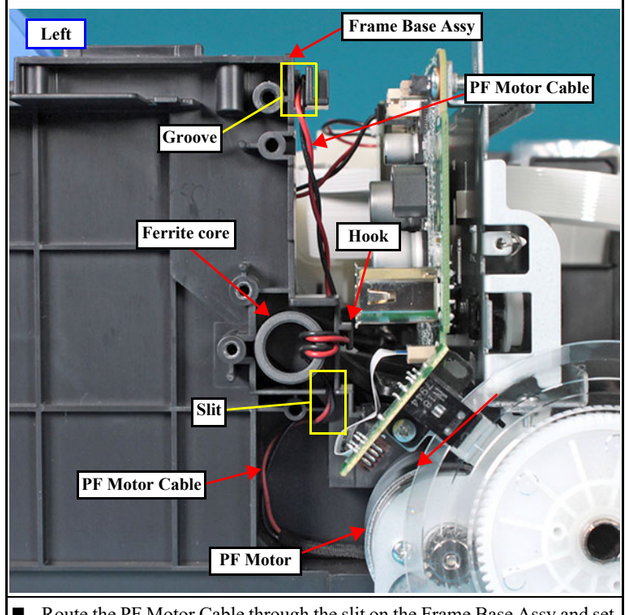
3.4 Routing FFCs/cables

PS Unit



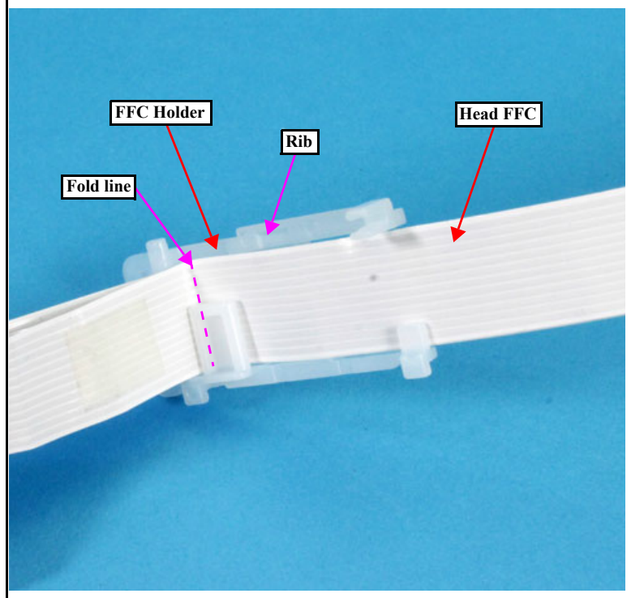
Route the PS Unit cable through the hook on the PS Unit, and then route the cable through the cutout on the holder and the hook.

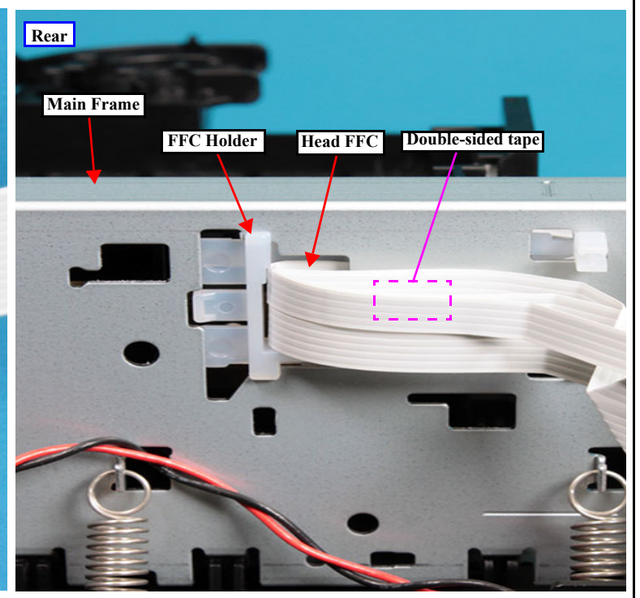
PF Motor Assy



- Route the PF Motor Cable through the slit on the Frame Base Assy and set the ferrite core in the position shown below.
- Route the PF Motor Cable through the groove and hook on the Frame Base Assy.

Head FFC/CR Encoder FFC (1;Main Board Side)





- Align the fold line of the Head FFC with the edge of the FFC Holder and route the FFC.
- Insert the Head FFC into inside of the rib on the FFC Holder.
- Secure the Head FFC to the point shown above with double-sided tape.

Head FFC/CR Encoder FFC (2;Print Head Side)

CAUTION

- If the extra length of the FFC is not appropriate, it will lead to damage to the FFC, so treat it appropriately as follows.
- If the adhesive strength of the double-sided tape is weak, replace the double-sided tape or replace the FFC itself.

1.Check marking / folding line

1. Check if the repaired product or the CR Encoder FFC of the ASP has the marking or fold line shown in the figure below (Fig.1).

- If there is a marking / fold line-> Follow the procedure after "2. Alignment / Paste"
- If there is no marking / fold line-> Mark the CR Encorder FFC as shown in (2) below, and follow the procedure after "2. Alignment / Paste".

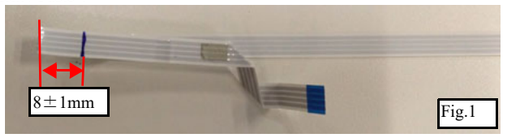


Fig.1

2. Mark the CR Encoder FFC at a position 8 ± 1 mm from the edge.

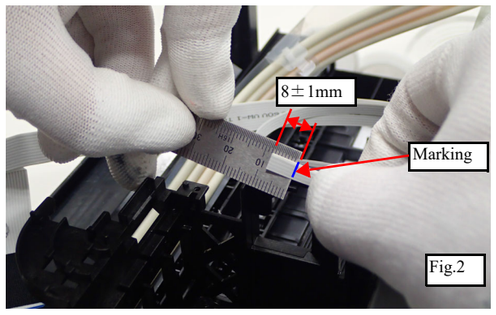


Fig.2

2.Alignment / paste

Align the marking (or fold line) of the CR Encoder FFC with the fold angle (Fig. 3) of the Head FFC, align the upper end (Fig. 4), and fix with double-sided tape.

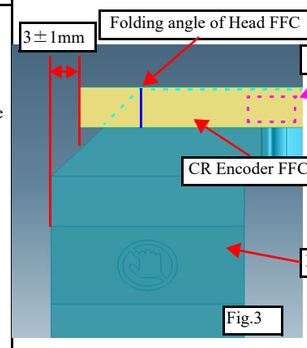


Fig.3

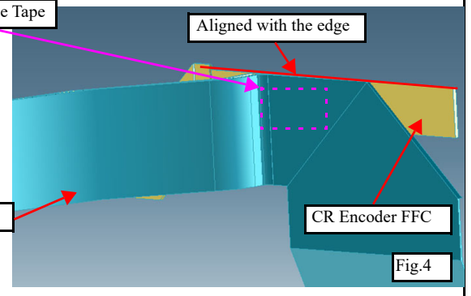


Fig.4

3.Confirmation

Make sure that the dimension from the end of the CR Encoder FFC to the end face of the Head FFC is 3 ± 1 mm.

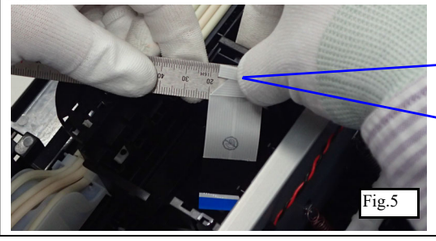


Fig.5

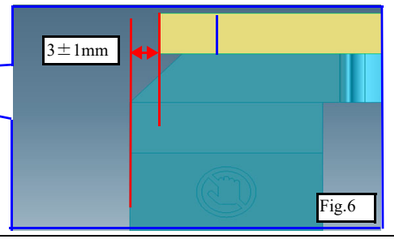
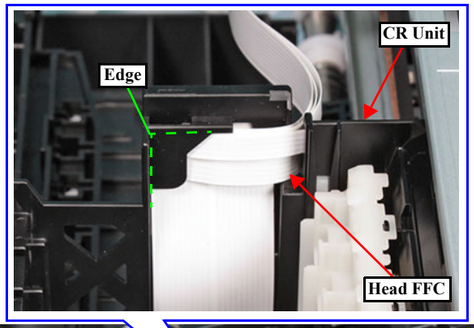
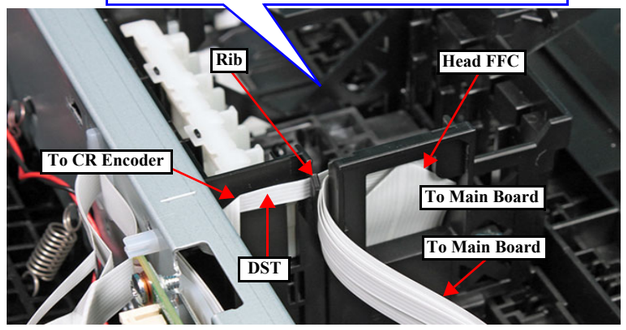


Fig.6

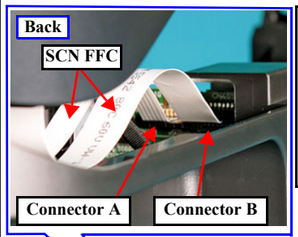
CR Side





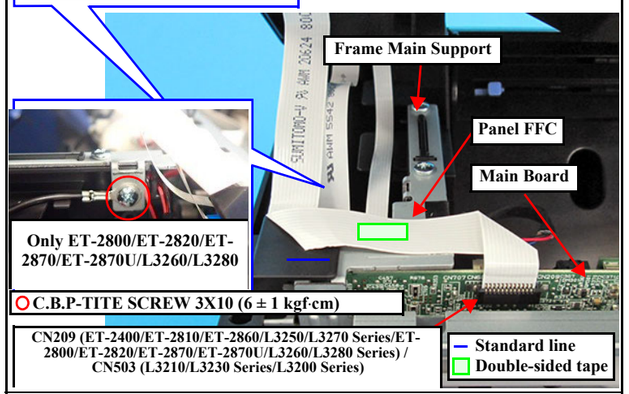
- Route the Head FFC along the edge of the CR Unit shown above.
- Branch the Head FFC at the rib on CR Unit referring as shown above.

Panel FFC (ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 SeriesET-2400/ET-2810/ET-2860/L3250/L3270 Series/L3200 Series/L3210/L3230 Series)



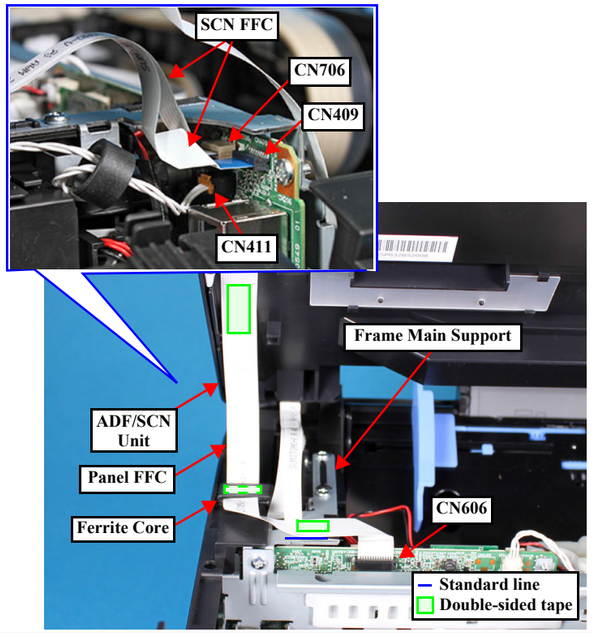
■ Connector A (Scanner Motor/Encoder)
ET-2400/ET-2810/ET-2860/L3250/L3270 Series:/
ET-2800/ET-2820/ET-2870/ET-2870U/ L3260/L3280 Series : CN706
L3210/L3230 Series/L3200 Series: CN8

■ Connector B (Scanner CIS)
ET-2400/ET-2810/ET-2860/L3250/L3270 Series: CN409
L3210/L3230 Series/L3200 Series: CN11



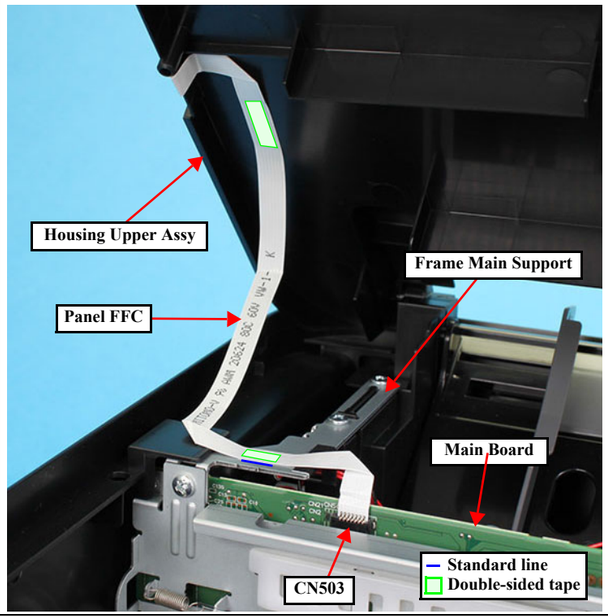
After connecting the Panel FFC to CN209 / CN503 connector on the Main Board, align it with the standard line on the Frame Main Support and secure the Panel FFC with double-sided tape.

Panel FFC (ET-4800/L5290/L5310 Series)



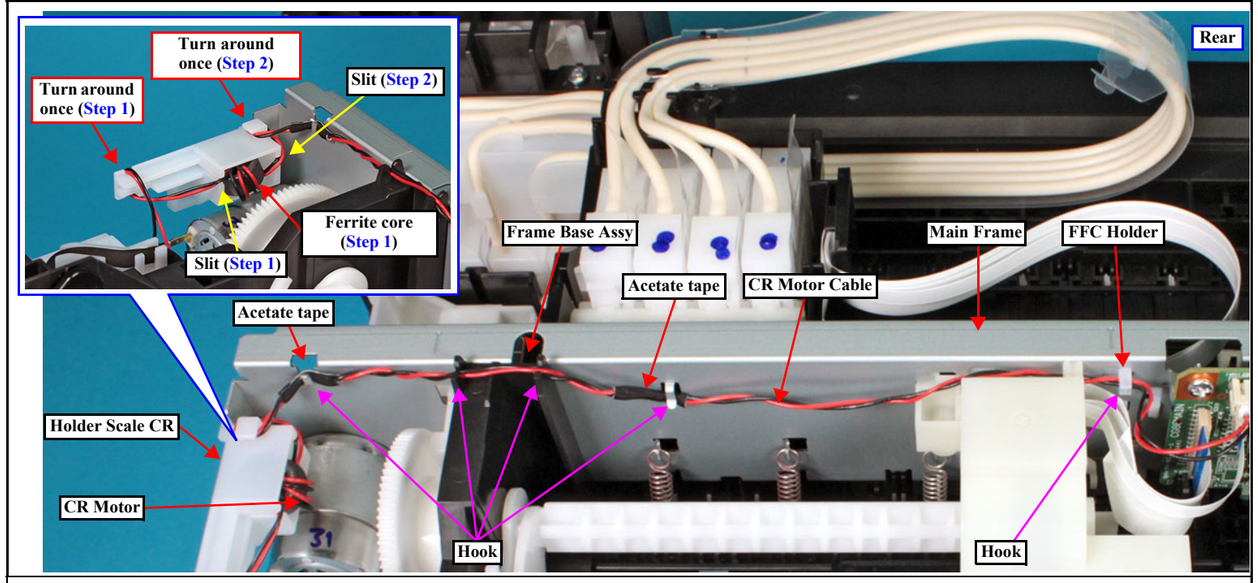
After connecting the Panel FFC to CN606 connector on the Main Board, align it with the standard line on the Frame Main Support and secure the Panel FFC with double-sided tape.

Panel FFC (L1210/L1230 Series/ET-1810/L1250/L1270 Series)



After connecting the Panel FFC to CN503 connector on the Main Board, align it with the standard line on the Frame Main Support and secure the Panel FFC with double-sided tape.

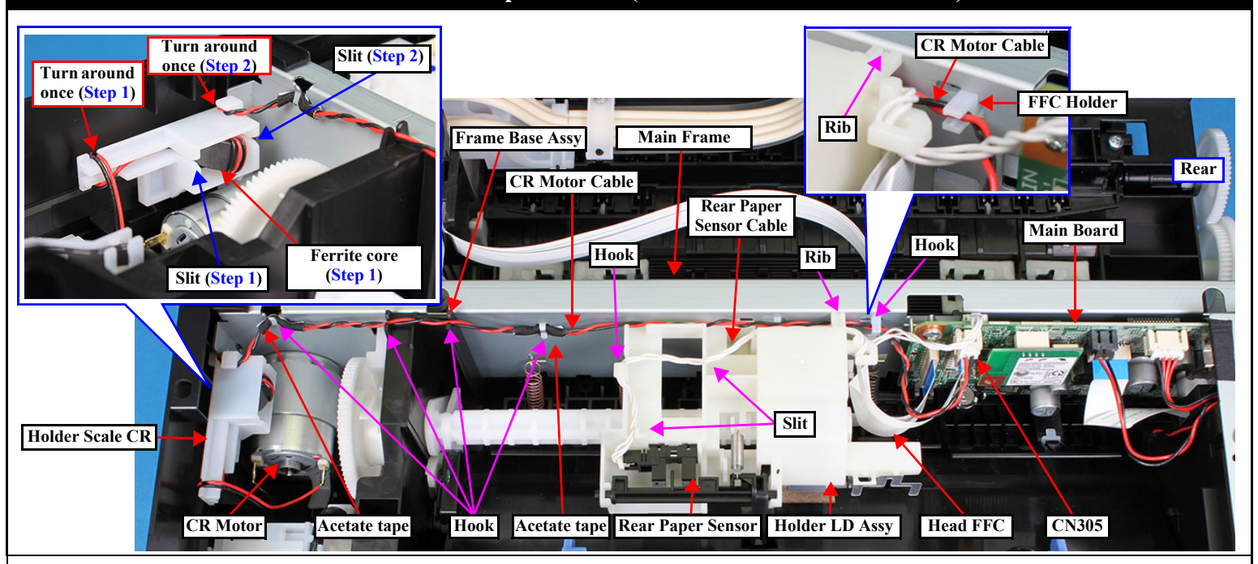
CR Motor Assy (ET-2400/ET-2810/ET-2860/L3250/L3270 Series/L3200 Series/L3210/L3230 Series/L1210/L1230 SeriesET-1810/L1250/L1270 Series)



■ Route the CR Motor Cable in the procedure given below.
1. After turning the CR Motor Cable around the Holder Scale CR once, route it through the slit and insert the ferrite core in the point shown above.
2. After routing the CR Motor Cable through the slit on the Holder Scale CR, turn the cable around the hook once.
3. Route the CR Motor Cable through the hooks on Frame Base Assy (x2), Main Frame (x2), FFC Holder (x1) and then connect the cable to CN305 (ET-2400/ET-2810/ET-2860/L3250/L3270 Series) / CN12 (L3210/L3230 Series/L3200 Series/L1210/L1230 Series/ET-1810/L1250/L1270 Series) connector on the Main Board.

■ Hook the acetate tape portions of the CR Motor Cable on the two hooks on the Main Frame.

CR Motor/Rear Paper Sensor (ET-4800/L5290/L5310 Series)

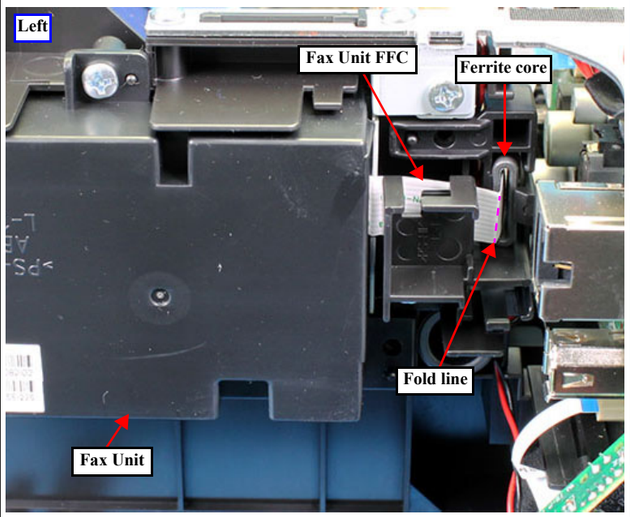


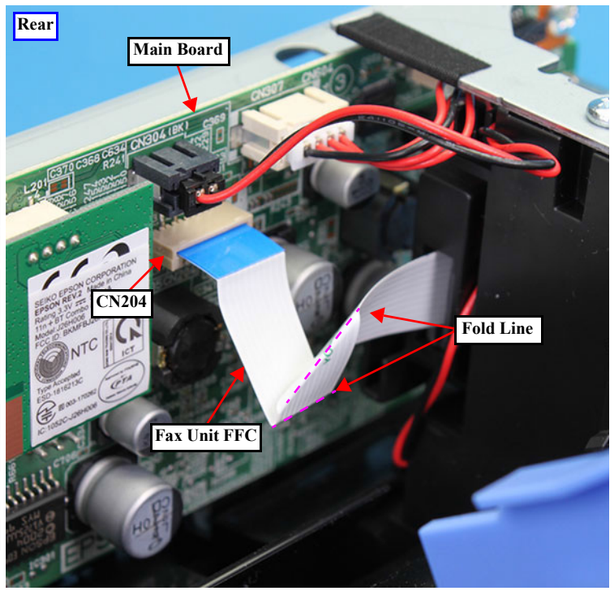
■ Route the CR Motor Cable in the procedure given below.
1. After turning the CR Motor Cable around the Holder Scale CR once, route it through the slit and insert the ferrite core in the point shown above.
2. After routing the CR Motor Cable through the slit on the Holder Scale CR, turn the cable around the hook once.
3. Route the CR Motor Cable through the hooks on Frame Base Assy (x2), Main Frame (x2), FFC Holder(x1) and the rib on the Holder LD Assy.
4. Connect the cable to CN305 connector on the Main Board as shown above.

■ Hook the acetate tape portions of the CR Motor Cable on the two hooks on the Main Frame.

■ Route the Rear Paper Sensor Cable through the slits (x2), the hook and the rib on the Holder LD Assy as shown above.

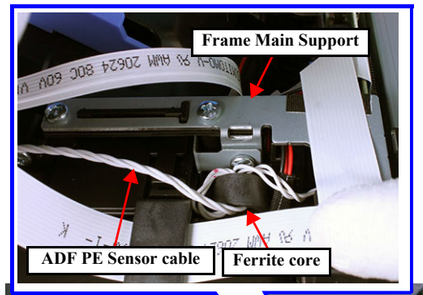
Fax Unit (ET-4800/L5290/L5310 Series only)

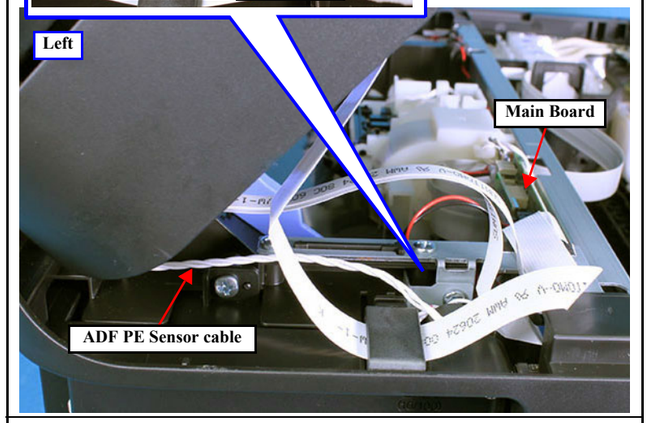




- Align the fold line of the Fax Unit FFC to the point shown above and insert the FFC through the ferrite core.
- Fold the Fax Unit FFC along the fold line and connect it to CN204 connector of the Main Board.

ADF PE Sensor Cable (ET-4800/L5290/L5310 Series)





Locate the ferrite core in the point shown above.

CHAPTER

4

ADJUSTMENT

4.1 Required Adjustments

The table from the following page lists the required adjustments depending upon the parts being repaired or replaced. Find the part(s) you removed or replaced, and check which adjustment(s) must be carried out.

- **If the EEPROM data cannot be read out from the old Main Board using the Adjustment Program when replacing the Main Board is required, the Porous Pad Assy must be replaced with the Main Board at the same time.**
- **After all required adjustments are complete, use the "Final check pattern print" function to print all adjustment patterns for final check. If you find a problem with the printout patterns, carry out the adjustment again.**
- **When replacing the Main Board and the Printer Mechanism at the same time, the adjustment should be made after performing the initial setting.**

- **Meaning of the marks used in the tables on the next pages are as follows.**
  - **◯ : Required only when replacing**
  - **◎ : Required when removing and/or replacing**
  - **- : No adjustment is required**
- **If there are multiple adjustment items for a replaced part, be sure to carry them out in the priority order indicated in the table.**

Table 4-1. Adjustment Correspondence Table

Priority order	Adjustment item \ Relevant parts	Porous Pad Assy	Scanner Unit*	Porous Pad PG Front	Porous Pad Ink Eject Lower	Holder Starwheel Assy	Print Head	ASF Hopper Assy	Shaft LD Assy	Lever Detector PE Assy	PGU Center Assy	PGU Right Assy	PGU Left Assy	PS Unit	PF Motor Assy	Main Board (EEPROM Copy OK)	Main Board (EEPROM Copy NG)	Main Frame Assy	CR Motor Assy	EJ Roller Shaft	PF Roller Assy	ADF Unit
1	Checking the Platen Gap	-	-	-	-	-	◎	-	-	-	-	-	-	-	-	-	-	◎	-	-	-	-
2	EEPROM Data Copy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	○	-	-	-	-	-	-
3	Initial Setting (S/No. & MAC Address)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	○	-	-	-	-	-
4	Head ID Input	-	-	-	-	-	○	-	-	-	-	-	-	-	-	-	○	-	-	-	-	-
5	Maintenance Counter	○	-	○	○	-	-	-	-	-	-	-	-	-	-	-	○	-	-	-	-	-
6	Initialize PF deterioration offset	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	○	-
7	PF motor heat protection control	-	-	-	-	-	-	-	-	-	-	-	-	○	○	-	○	-	-	-	-	-
8	CR motor heat protection control	-	-	-	-	-	-	-	-	-	-	-	-	○	-	-	○	-	○	-	-	-
9	Ink Charge	-	-	-	-	-	○	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	PF/EJ adjustment	-	-	-	-	◎	-	◎	◎	-	◎	◎	◎	-	-	-	○	◎	-	◎	◎	-
11	PF Band adjustment	-	-	-	-	◎	-	◎	◎	-	◎	◎	◎	-	-	-	○	◎	-	◎	◎	-
12	TOF/BOF adjustment	-	-	-	-	-	-	-	-	◎	-	-	-	-	-	-	○	◎	-	-	-	-
13	1st Dot adjustment	-	-	-	-	-	◎	◎	◎	○	-	-	-	-	-	-	○	◎	-	-	-	-
14	Head angular adjustment	-	-	-	-	-	◎	-	-	-	-	-	-	-	-	-	○	◎	-	-	-	-
15	Bi-d adjustment	-	-	-	-	-	◎	-	-	-	-	-	-	-	-	-	○	◎	◎	-	-	-
16	ADF Type Select*1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	○
17	Scanner motor heat protection control*2	-	○	-	-	-	-	-	-	-	-	-	-	○	-	-	○	-	-	-	-	○
18	Final check pattern print	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
19	Preparation for shipment	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

Note "*1": Only for ET-4800/L5290 Series

"*2": Except for L1210/L1230 Series/ET-1810/L1250/L1270 Series

4.2 Adjustment Program

This section provides the operating environment, functions related to safety and privacy policy, and the adjustment item newly added of the Adjustment Program. See " 4.1 Required Adjustments (p141)" for the adjustments not explained here.

4.2.1 Operating Environment

The operating environment for the Adjustment Program is as follows.

- OS: Windows 7, Windows 8.1, Windows 10, Windows 11
- Interface:USB

4.2.2 Adjustment and Inspection List

☐ Mechanical adjustments and inspections

Adjustment name		Purpose	Adjustment procedure overview	Tools	Reference
Check	Checking the Platen Gap	Set the clearance of the gap between the nozzle surface of the print head and the platen to an appropriate amount.	Place a thickness gauge in the specified location and then move the carriage unit over the thickness gauge and check the clearance.	• Thickness gauge.	P.154

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☐ Software adjustments and inspections

Adjustment Item		Purpose	Adjustment / inspection paper / feed tray	Adjustment procedure overview	Tools	Reference
Category	Name					
Initial settings	EEPROM Data Copy	When the Main Board needs to be replaced, use this to copy adjustment values stored on the old Main Board to the new board. If this copy is completed successfully, all the other adjustments required after replacing the Main Board are no longer be necessary.	---	With the old Board installed, use the adjustment program to read out the EEPROM data, and after exchanging with the new Board, load the read out data.	• Adjustment Program	---
	Initial Setting	This must be carried out after replacing the Main Board to apply settings for the target market, etc. Perform MAC address setting and default password setting if necessary.	---	Enter the product serial number of the printer using the adjustment program, and write the initial setting information onto the Main Board. If the printer has a password label attached, set the password to the default password on the label.	• Adjustment Program	---
	Head ID Input	Input the ID incorporating the correction values for print head production variations.	---	Select "Head ID Input" from the Adjustment Program and execute the item. (Auto input) After the ID is input, check that the correct print head ID has been written in the same menu.	• Adjustment Program	---
	Initialize PF deterioration offset	Reset the deterioration correction counter.	---	Select "Initialize PF deterioration offset" or "Initialize PW sensor deterioration counter" from the Adjustment Program and execute the counter reset.	• Adjustment Program	---
					• Adjustment Program	---

Adjustment Item		Purpose	Adjustment / inspection paper / feed tray	Adjustment procedure overview	Tools	Reference
Category	Name					
Adjustment (Mechanical)	PF motor heat protection control	Measure product variations to set the appropriate correction values. Also, make a pass/fail judgment by calculating whether or not the operation load is within the expected range from the motor current value.	---	Automatically measure the correction value and perform the operation load check by selecting "XX heat protection control" from the Adjustment Program menu and executing the item.	• Adjustment Program	---
	CR motor heat protection control		---			---
	Scanner motor heat protection control*1		---			---
	ADF Type Select	Set the appropriate paper feed correction values for ADF.	---	Check the label on the bottom of the ADF and select the corresponding ADF type from the Adjustment Program to write the appropriate ADF type setting.		---

Adjustment Item		Purpose	Adjustment / inspection paper / feed tray	Adjustment procedure overview	Tools	Reference
Category	Name					
Adjustment (Print adjustment by program)	PF/EJ adjustment	Use software to correct the offset due to mechanical variations and media transportation characteristics.	Paper type: Photo matte paper Size: A4	Select "PF/EJ adjustment" from the Adjustment Program and execute the item to print the adjustment pattern. Determine the adjustment value from the adjustment pattern based on the judgment criteria and then enter the adjustment value from the PF/EJ adjustment menu.	• Adjustment Program	P.148
	PF Band adjustment	Use software to correct the offset of when band printing due to mechanical variations and media transportation characteristics.	Paper type: Plain Paper Size: A4	Select "PF Band adjustment" from the Adjustment Program and execute the item to print the adjustment pattern. Determine the adjustment value from the adjustment pattern based on the judgment criteria and then enter the adjustment value from the PF Band adjustment menu.	• Adjustment Program	P.149
	1st Dot adjustment	1st Dot Adjustment: Use software to correct the print timing so that the main scanning direction print start position becomes the target value.	Paper type: Photo matte paper Size: A4	Select "1st Dot adjustment" from the Adjustment Program and execute the item to print the adjustment pattern. Determine the adjustment value from the adjustment pattern based on the judgment criteria and then enter the adjustment value from the 1st Dot adjustment menu.	• Adjustment Program • Ruler	P.150
	Head angular adjustment	Use software to correct the vertical/ horizontal tilt occurs when installing the head.	Paper type: Plain Paper Size: A4	Select "head angular adjustment" from the Adjustment Program and execute the item to print the adjustment pattern. Determine the adjustment value from the adjustment pattern based on the judgment criteria and then enter the adjustment value from the head angular adjustment menu.	• Adjustment Program	P.151
	Bi-d adjustment	Use software to correct the print timing for aligning the print position between the outward path and return path when bidirectional printing.	Paper type: Plain Paper Size: A4	Select "Bi-d adjustment" from the Adjustment Program and execute the item to print the adjustment pattern. Determine the adjustment value from the adjustment pattern based on the judgment criteria and then enter the adjustment value from the Bi-d adjustment menu.	• Adjustment Program	P.152

Adjustment Item		Purpose	Adjustment / inspection paper / feed tray	Adjustment procedure overview	Tools	Reference
Category	Name					
Adjustment (Print adjustment by program)	TOF/BOF adjustment	Use software to correct the paper detection position offset caused by variations in the PE sensor attachment position and print head position.	Paper type: Photo matte paper Size: A4	Select "TOF/BOF adjustment" from the Adjustment Program menu and execute, and run plain paper through. Correct in software paper errors in detected position.	• Adjustment Program	P.153
Maintenance	Head Cleaning	Run this cleaning when dots missing is observed on an adjustment pattern printed by the adjustment program.	---	Perform a head cleaning using the adjustment program, and print a nozzle check pattern to see if all the nozzles fire ink properly.	• Adjustment Program	---
	Ink Charge	This must be carried out after replacing the Print Head in order to fill ink inside the all nozzles of the new ASP Print Head.	---	After installing the Print Head, perform an ink charge using the adjustment program, and print a nozzle check pattern to see if all the nozzles fire ink properly. The auto cleaning is also settable.	• Adjustment Program	---
	Waste ink pad counter	When a maintenance error occurs, replace the waste ink pad and reset the counter for the pad using this menu. When the counter is nearly full, but the error has not occurred yet, you can do the same to prevent the user from ordering repair service again in the near feature.	---	After exchanging the Porous Pad (Porous Pad Assy/Porous Pad PG Front/Porous Pad Ink Eject Lower), initialize the counter by the adjustment program.	• Adjustment Program	---
	Final check pattern print	Use this to check if the all adjustments have been properly made.	Paper type: Plain Paper, Photo Matte paper Size: A4	The all adjustment patterns are printed automatically.	• Adjustment Program	---
	Printer startup mode selection*2	Execute to switch to one of the following printer startup modes. ☐ Normal Mode ☐ Printer Inspection Mode ☐ Service Support Mode	---	Select and execute the printer startup mode you want to start from the Adjustment Program menu. After executing the printer mode or service support mode, be sure to return to the normal mode to finish the work.	• Adjustment Program	---
	Preparation for shipment	After repairs, reset the error history, and as necessary select cleaning when the printer is next turned on.	---	Select "Preparation for shipment" from the Adjustment Program menu and execute it.	• Adjustment Program	---

Note "*1": Except for L1210/L1230 Series/ET-1810/L1250/L1270 Series L3260/L3280 Series

"*2": Only for ET-4800/L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/

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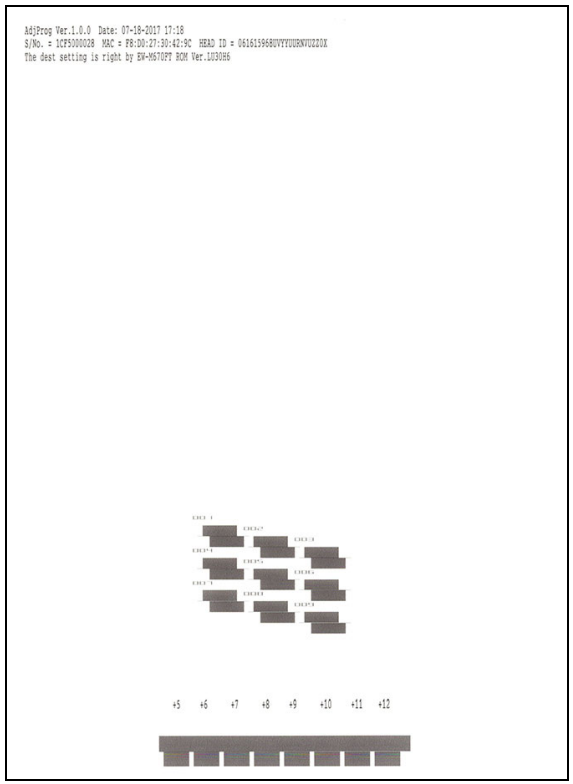
4.2.3 Details of the Adjustment Program

PF/EJ ADJUSTMENT

☐ Paper and feed tray
- ■ Paper size: A4
- ■ Paper type: Photo matte paper

☐ Adjustment pattern


AdjProg Ver.1.0.0 Date: 07-18-2017 17:18
S/No. = ICF5000028 MAC = F8:D0:27:30:42:9C HEAD ID = 06161596BUYYUURWUZZOX
The dest setting is right by EW-M670FT ROM Ver.LU3086
+5 +6 +7 +8 +9 +10 +11 +12

☐ Judgment
Select the numerical value of the pattern that has no overlapping of the upper and lower blocks and the least white bands.

☐ Adjustment procedure

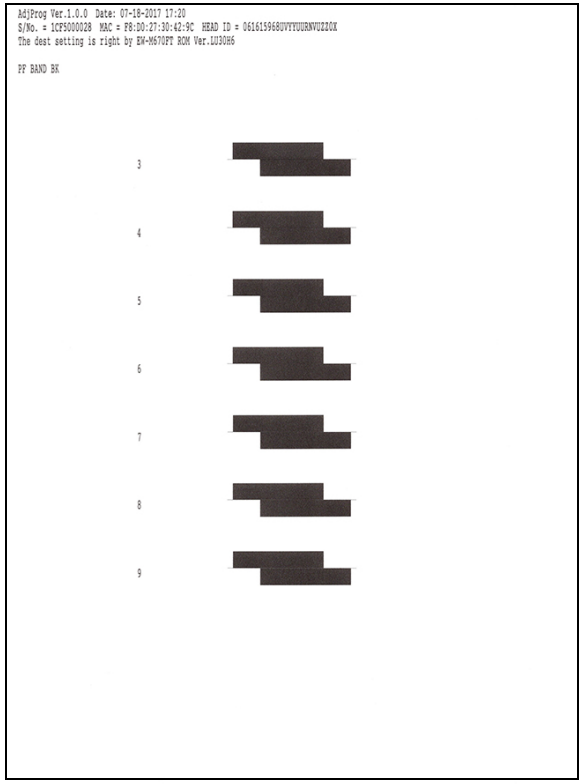
1. Start the Adjustment Program.
2. Select “PF/EJ adjustment”.
3. The PF/EJ adjustment menu appears.
4. Load paper into the paper feed tray.
5. Press the [Print] button to print the adjustment pattern.
6. Check the adjustment pattern.
7. Check the adjustment pattern and determine the adjustment value based on the judgment procedure.
8. Enter the adjustment value.
9. Check that an adjustment value is entered and then press the [Finish] button to end adjustment.

PF BAND ADJUSTMENT

☐ Paper and feed tray

- ■ Paper size: A4
- ■ Paper type: Plain paper

☐ Adjustment pattern



☐ Judgment
Select the numerical value of the pattern that has no overlapping of the upper and lower blocks and the least white bands.

☐ Adjustment procedure

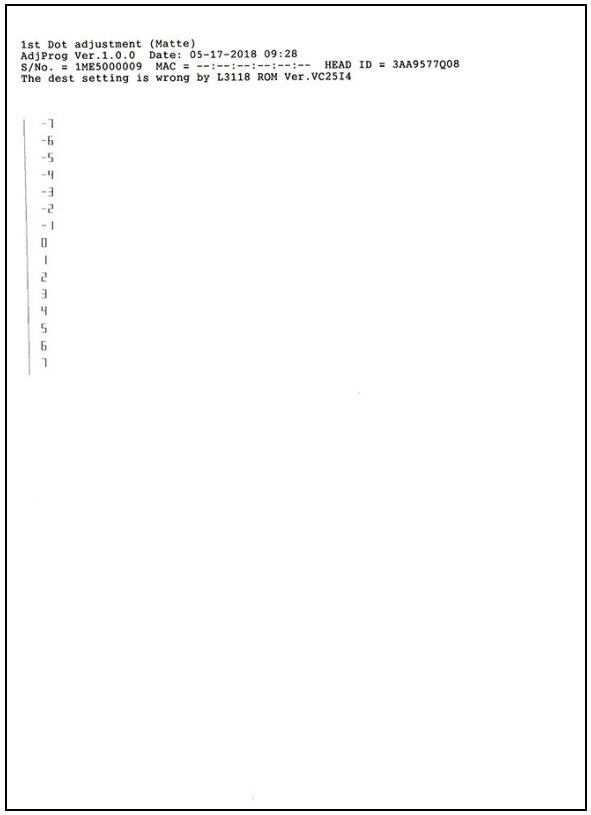
1. Start the Adjustment Program.
2. Select “PF Band adjustment”.
3. The PF Band adjustment menu appears
4. Load paper into the paper feed tray.
5. Press the [Print] button to print the adjustment pattern.
6. Check the adjustment pattern.
7. Check the adjustment pattern and determine the adjustment value based on the judgment procedure.
8. Enter the adjustment value.
9. Check that an adjustment value is entered and then press the [Finish] button to end adjustment.

1ST DOT ADJUSTMENT

☐ Paper and feed tray

- ■ Paper size: A4
- ■ Paper type: Plain paper

☐ Adjustment pattern



☐ Judgment

From the stepped patterns printed on the left edge of the paper, select the numerical value that is 5 mm from the left edge of the paper.

☐ Adjustment procedure

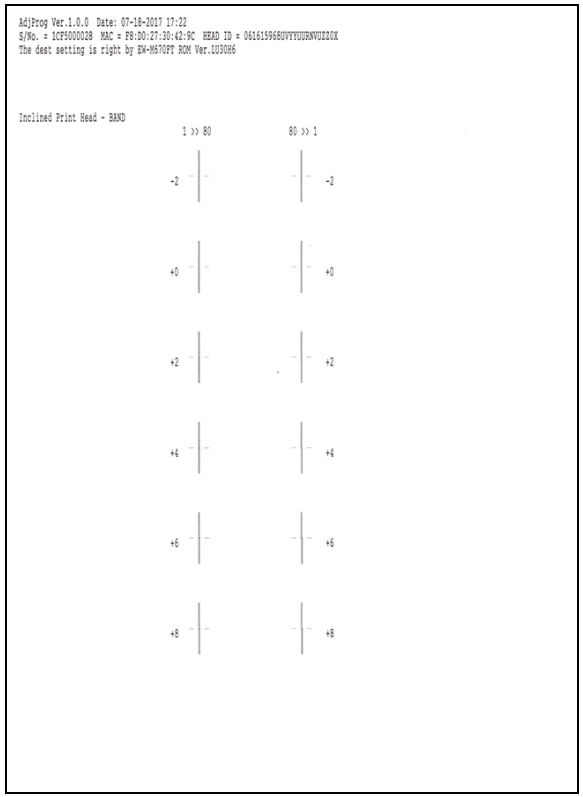
1. Start the Adjustment Program.
2. Select “1st Dot adjustment”.
3. The 1st Dot adjustment menu appears.
4. Load paper into the paper feed tray.
5. Press the [Print] button to print the adjustment pattern.
6. Check the adjustment pattern.
7. Check the adjustment pattern and determine the adjustment value based on the judgment procedure.
8. Enter the adjustment value.
9. Check that an adjustment value is entered and then press the [Finish] button to end adjustment.

HEAD ANGULAR ADJUSTMENT

☐ Paper and feed tray

- ■ Paper size: A4
- ■ Paper type: Plain paper

☐ Adjustment pattern



☐ Judgment
From among the printed patterns, select the pattern where the above and below lines are the straightest.

☐ Adjustment procedure

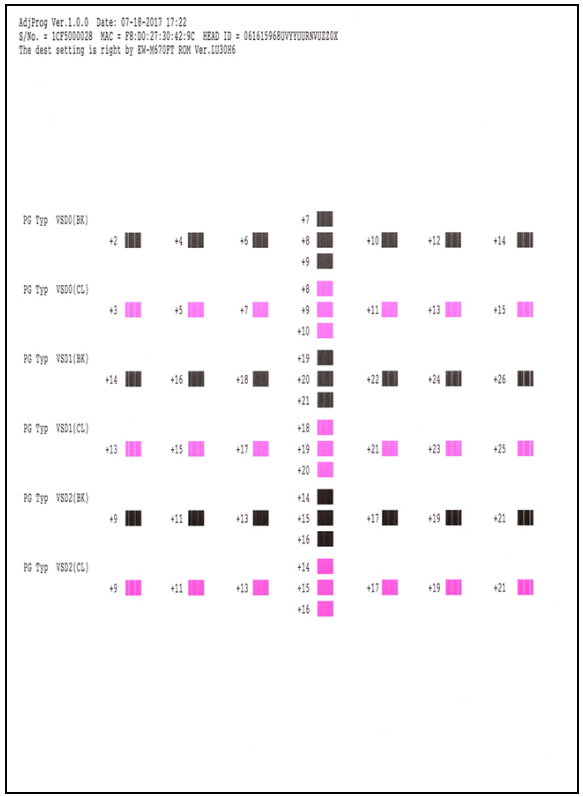
1. Start the Adjustment Program.
2. Select “Head angular adjustment”.
3. The Head angular adjustment menu appears.
4. Load paper into the paper feed tray.
5. Press the [Print] button to print the adjustment pattern.
6. Check the adjustment pattern.
7. Check the adjustment pattern and determine the adjustment value based on the judgment procedure.
8. Enter the adjustment value.
9. Check that an adjustment value is entered and then press the [Finish] button to end adjustment.

BI-D ADJUSTMENT

☐ Paper and feed tray

- ■ Paper size: A4
- ■ Paper type: Plain paper

☐ Adjustment pattern


AdjProg Ver.1.0.0 Date: 07-18-2017 17:22
S/No. = 1CF5000028 MAC = F8:D0:27:30:42:9C HEAD ID = 061615968UVYYUURNVUZZOX
The dest setting is right by EW-M670FT ROM Ver.LU30H6
PG Typ VSD0(BK)
PG Typ VSD0(CL)
PG Typ VSD1(BK)
PG Typ VSD1(CL)
PG Typ VSD2(BK)
PG Typ VSD2(CL)

☐ Judgment

Select the pattern for which there is no gap and overlapping of the left and right patterns.

☐ Adjustment procedure

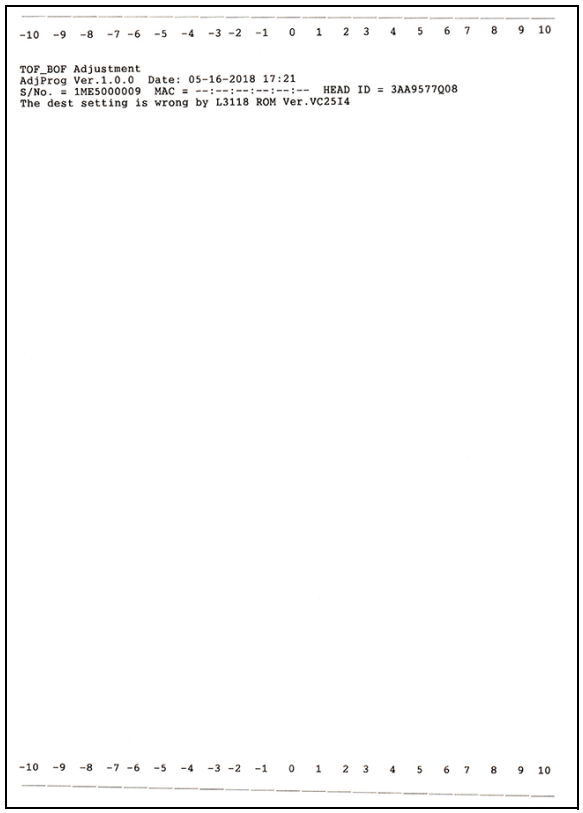
1. Start the Adjustment Program.
2. Select “Bi-d adjustment”.
3. The Bi-d adjustment menu appears.
4. Load paper into the paper feed tray.
5. Press the [Print] button to print the adjustment pattern.
6. Check the adjustment pattern.
7. Check the adjustment pattern and determine the adjustment value based on the judgment procedure.
8. Enter the adjustment value.
9. Check that an adjustment value is entered and then press the [Finish] button to end adjustment.

TOF/BOF ADJUSTMENT

☐ Paper and feed tray

- ■ Paper size: A4
- ■ Paper type: Photo Matte paper

☐ Adjustment pattern



☐ Judgment

From the stepped patterns printed on the bottom and top edges of the paper, select the numerical value that is 5 mm from the edge of the paper for each of them.

☐ Adjustment procedure

1. Start the Adjustment Program.
2. Select “TOF/BOF adjustment”.
3. The TOF/BOF adjustment menu appears.
4. Load paper into the paper feed tray.
5. Press the [Print] button to print the adjustment pattern.
6. Check the adjustment pattern.
7. Check the adjustment pattern and determine the adjustment value based on the judgment procedure.
8. Enter the adjustment value.
9. Check that an adjustment value is entered and then press the [Finish] button to end adjustment.

4.3 Mechanism Adjustment / Check

4.3.1 Checking the Platen Gap

This section describes the procedure for checking the platen gap (PG).

CHECK

- **The standard range of the PG is as follows:**
  - **Standard: 1.70 +/- 0.25 mm**
- **Check the platen gap before installing the CR Scale, after attaching the adapter.**

☐ Tools

- Thickness gauges for PG check: 1.45 mm gauge, 1.95 mm gauge

4.3.1.1 Confirmation procedure

CAUTION

When performing the PG adjustment, make sure of the following.

- **Move the CR Unit by pulling the top pf the CR timing belt.**
- **Be careful not to damage the nozzle surface of the Print Head with the thickness gauge.**
- **When make the Print Head touch the thickness gauge, be careful not to let the Print Head run onto the gauge.**

1. Move the CR Unit in the middle of the printer.
2. Place the 1.45 mm thickness gauges on the points shown below.
3. Move the CR Unit to the right and to the left to make sure that the CR Unit does not touch the gauges. If it touches a gauge, the PG is narrower than the standard. In such a case, reassemble the Printer Mechanism.
4. Move the CR Unit back in the middle of the printer and place the 1.95 mm thickness gauges on the same points as in Step 2.
5. Move the CR Unit to the right and to the left to make sure that the CR Unit touches the gauges. If it does not touch any gauge, the PG is wider than the standard. In such a case, reassemble the Printer Mechanism.

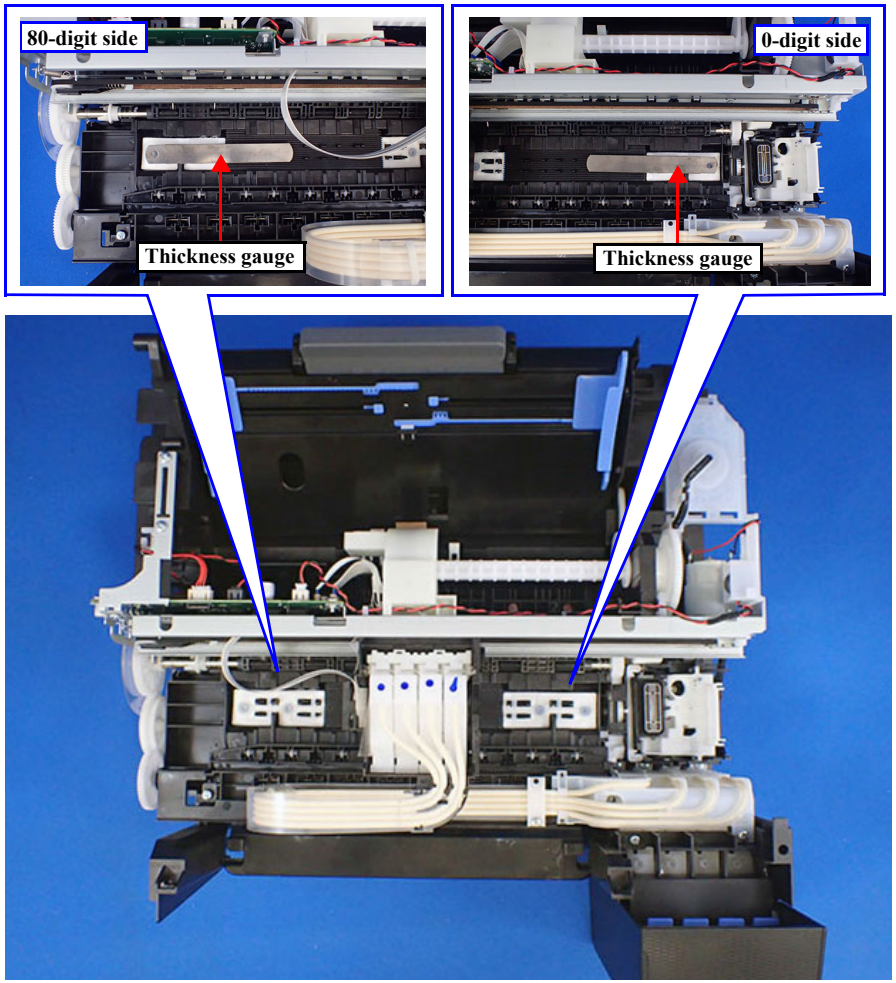


Figure 4-1. Position of the Thickness Gauge

CHAPTER

5

MAINTENANCE

5.1 Cleaning

5.1.1 Cleaning the nozzle plate section of the Print Head

When foreign materials that can be seen visually is soiled to the nozzle plate section of the Print Head (F2 head), cleaning is necessary.

Cleaning procedure is described below.

CAUTION

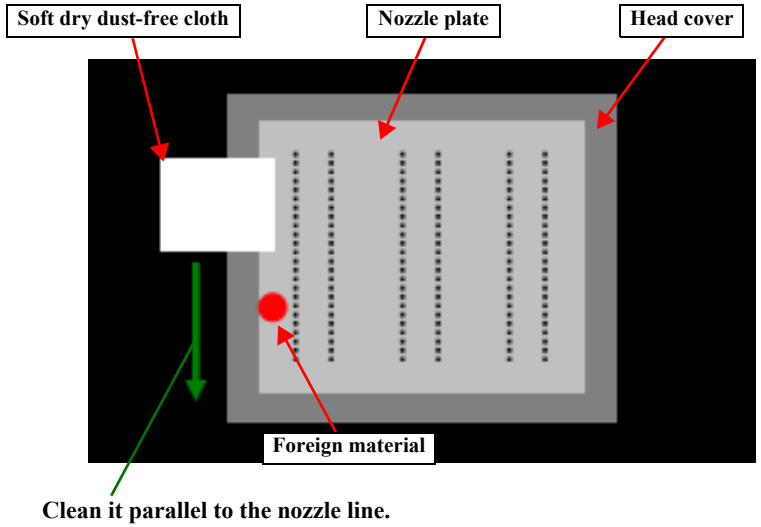
- **This cleaning should be carried out only if you can see foreign material on the nozzle plate of the Print Head.**
- **Make sure not to break the nozzle plate with excess force.**
- **Make sure not to deform the head cover.**
- **To prevent mixed colors, make sure to clean it parallel to the nozzle line.**
- **Only wipe off where foreign material attaches, and do not touch the other sections to the utmost. If foreign material is big, make sure to wipe it off with a clean part of a soft dry dust-free cloth in batches.**
- **When cleaning the nozzle plate of the Print Head, pure water/CR02 can be used to enhance transcription. But, make sure not to use the undesignated liquid (tap water/ CR06) because they may have a negative influence on the Print Head filter.**

☐ Tools

- Soft dry dust-free cloth
- Liquid (pure water/CR02)

☐ Cleaning procedure

1. Remove foreign material by moving a soft dry dust-free cloth slowly and lightly.



Note : Pure water/CR02 can be used to enhance transcription of foreign material.

5.1.2 Cleaning the Exterior Parts/inside of the printer

This section describes how to clean the sections other than the carriage.

☐ Instructions for cleaning

- Exterior parts such as housing
  Wipe dirt off with a soft clean cloth moistened with water. For glossy or transparent parts, use of unwoven cloth is recommended to avoid scratching those parts.
- Inside of the printer
  Remove paper dust with a vacuum cleaner.
- Rubber or plastic rollers such as an LD Roller used to feed paper
  If paper dust or the like adhered to the rollers decreases the frictional force of the rollers and causes paper feed problems, moisten a cloth with water or diluted ethanol and wring the water out, then wipe the dust off the roller using the cloth.

☐ Instructions for cleaning ink stains

Wipe the stains off with a cloth wrung out of diluted ethanol.

- **Do not use ethanol for cleaning the transparent parts. Doing so may cause them to get cloudy.**
- **When wiping paper dust off the LD Roller, be careful not to rub against the surface asperity.**
- **To minimize the effect on the parts, use diluted ethanol such as 70% diluted ethanol.**
- **After using alcohol for cleaning, make sure to wipe the part off with a soft dry dust-free cloth to remove ethanol traces fully.**

5.2 Lubrication

The type and amount of the grease used to lubricate the printer parts are determined based on the results of the internal evaluations. Therefore, refer to " 5.2.1 Lubrication Points and Instructions (p158)" for the repairing procedures below, and apply the specified type and amount of the grease to the specified part of the printer mechanism.

" 5.2.1 Lubrication Points and Instructions (p158)" also provides information about whether or not the parts which require lubrication are supplied as ASP and the lubrication status when supplied as ASP. For the parts which are not supplied as ASP, if their movement is not smooth enough, check their lubrication status and lubricate them if necessary.

☐ Grease

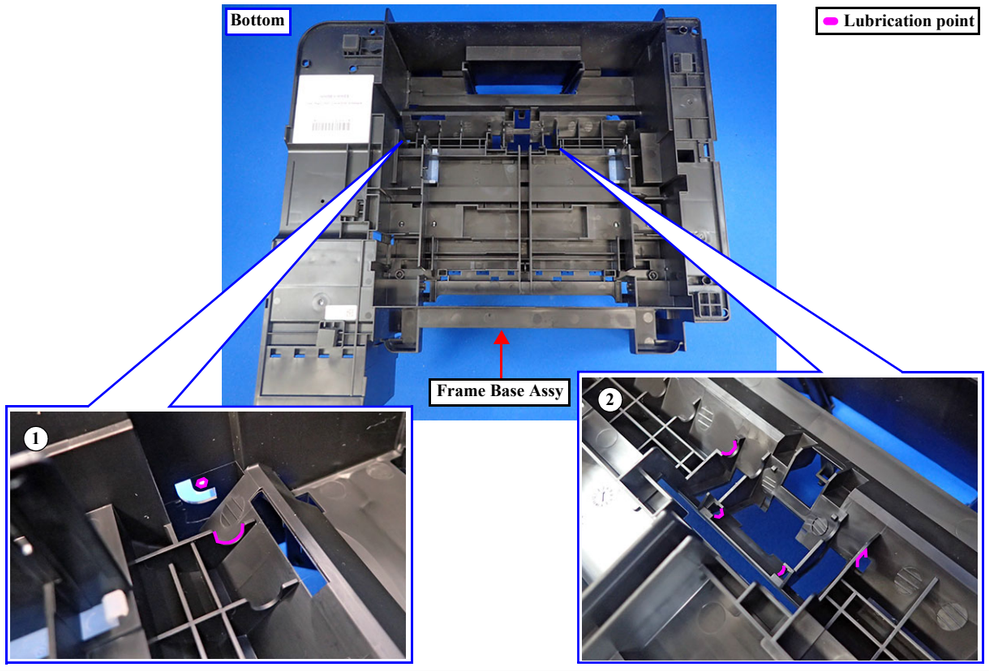
Type	Name	EPSON Part Code	Supplier
Grease	G-45	1033657	EPSON
Grease	G-96	1590700	EPSON
Grease	G-97	1635441	EPSON

☐ Tools

Name	Availability	EPSON Part Code
Injector	O *	---
Brush	O *	---
Flux dispenser	O *	---

Note "*": Use tools whose specifications are specified in " 5.2.1 Lubrication Points and Instructions (p158)"

5.2.1 Lubrication Points and Instructions



<Part supply as ASP>
None
<Lubrication status when supplied as ASP>
Not lubricated

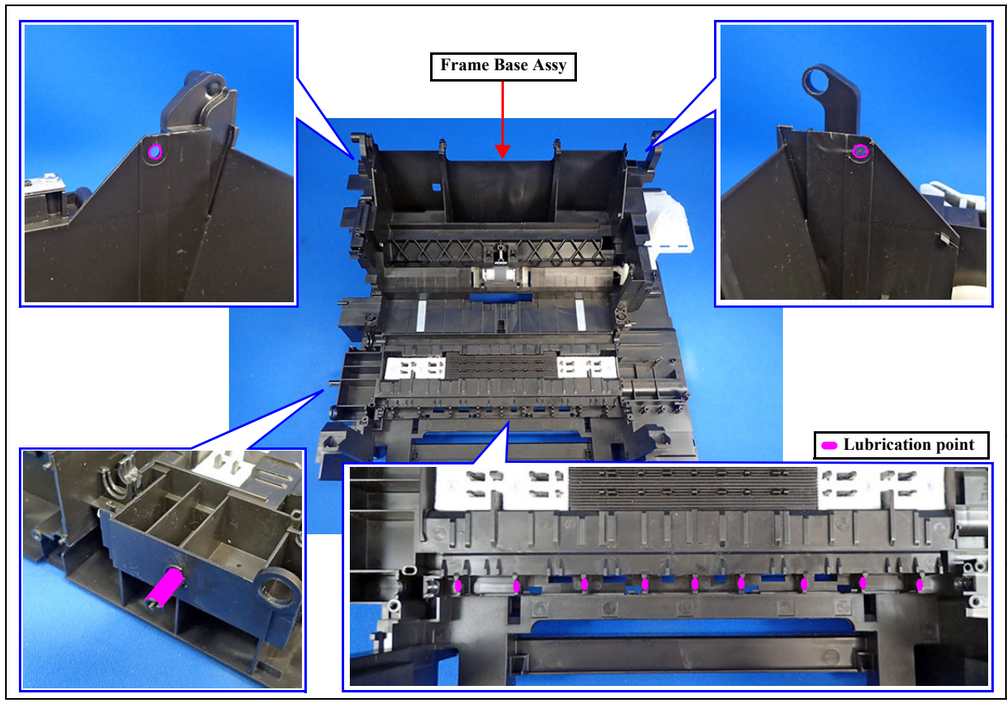
<Lubrication Point>
1. Contact points between Lever Paper Return and Frame Base Assy (two points)
2. Contact points between RTD Roller Assy and Frame Base Assy (four points)

<Type>
G-96

<Application Amount>
Appropriate amount

<Remarks>
☐ Apply with Flux Dispenser.
☐ Stir G-96 before use.

Figure 5-1. Lubricating the Frame Base Assy (Bottom Side)



<Part supply as ASP>
None
<Lubrication status when supplied as ASP>
Not lubricated

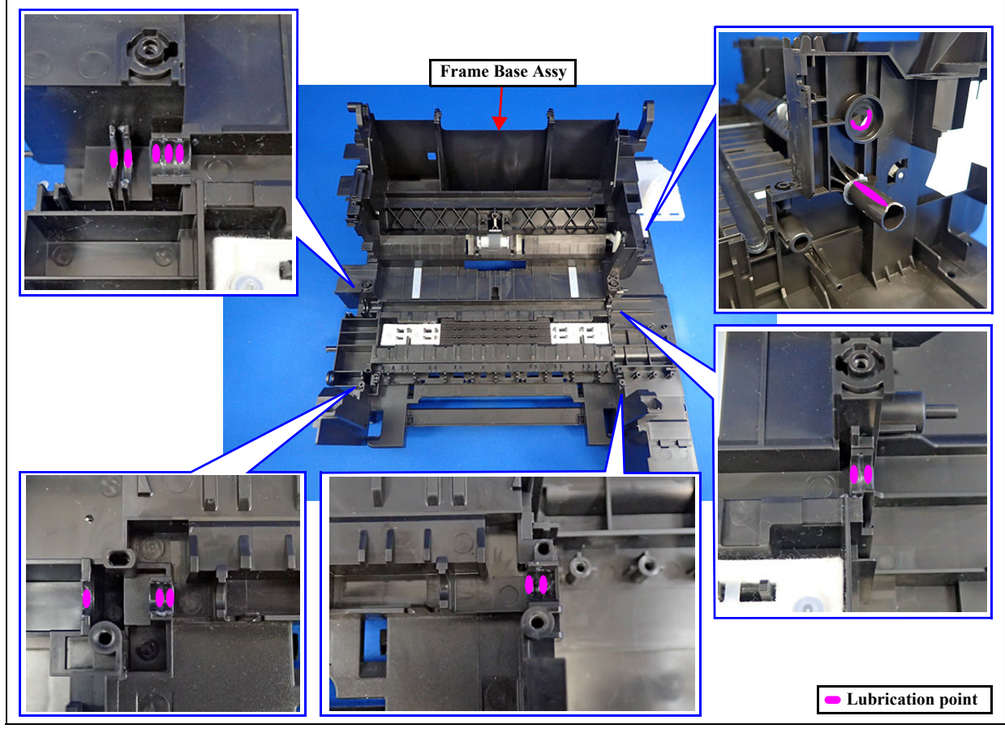
<Lubrication Point>
1. Contact points between Hopper and Frame Base Assy (two points)
2. Gear inserter shaft on left side of Frame Base Assy.
3. Contact points between EJ Roller and Frame Base Assy (9 points)

<Type>
G-96

<Application Amount>
Appropriate amount

<Remarks>
☐ Apply with Flux Dispenser.
☐ Stir G-96 before use.

Figure 5-2. Lubricating top side of the Frame Base (1)



<Part supply as ASP>
None
<Lubrication status when supplied as ASP>
Not lubricated

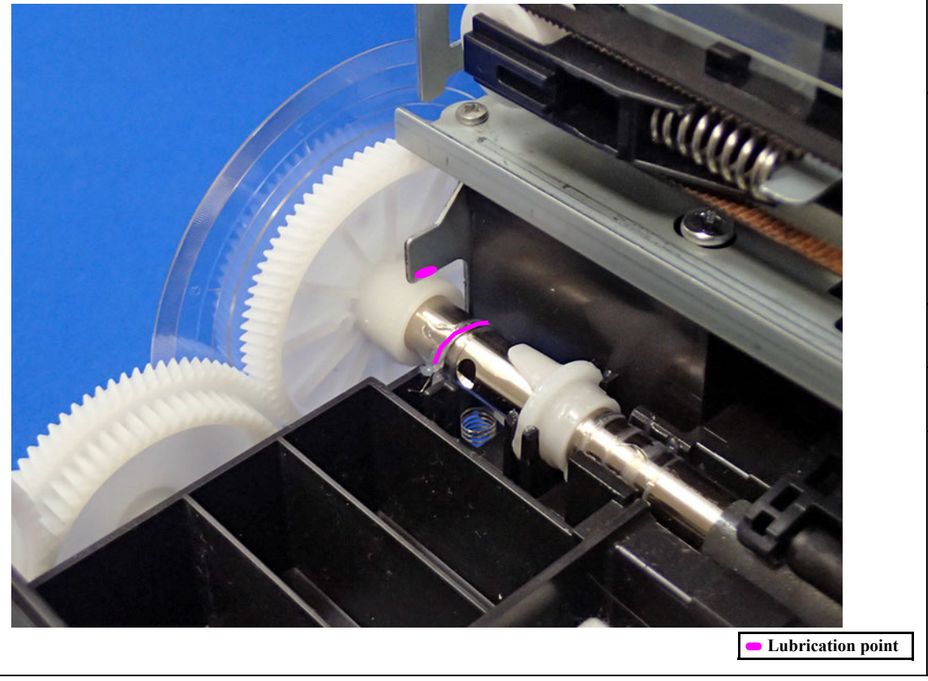
<Lubrication Point>
1. Contact points between EJ Roller and Frame Base Assy (C-cut position)
2. Contact points between PF Roller and Frame Base Assy (left side: five points)
3. Contact points between PF Roller and Frame Base Assy (right side: two points)
4. Bush of Frame Base Assy
5. Shaft on right side of Frame Base Assy

<Type>
G-97

<Application Amount>
0.02 g/position

<Remarks>
☐ After applying with injector
☐ Do not contaminate other parts

Figure 5-3. Lubricating top side of the Frame Base (2)



<Part supply as ASP>
None
<Lubrication status when supplied as ASP>
Not lubricated

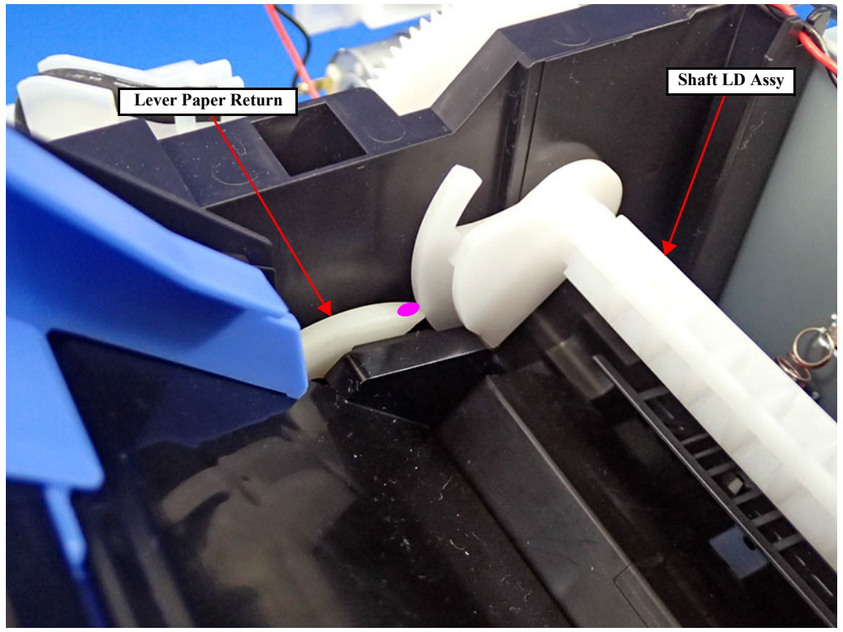
<Lubrication Point>
1. Contact points between PF Roller and PF Grounding Spring
2. Contact points between PF Roller and PF Motor Frame (two points)

<Type>
G-97

<Application Amount>
0.02 g

<Remarks>
Apply with injector.

Figure 5-4. Lubricating the PF Roller



<Part supply as ASP>
None
<Lubrication status when supplied as ASP>
Not lubricated

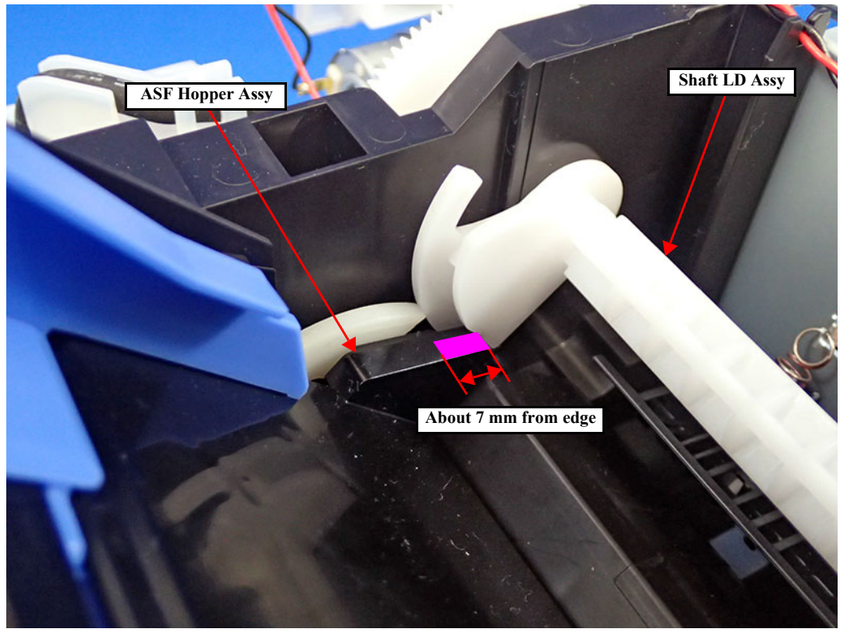
<Lubrication Point>
Contact point between Lever Paper Return and Shaft LD Assy

<Type>
G-97

<Application Amount>
0.05g

<Remarks>
- ☐ After applying with injector
- ☐ Do not contaminate other parts

Figure 5-5. Lubricating the Lever Paper Return



<Part supply as ASP>
None
<Lubrication status when supplied as ASP>
Not lubricated

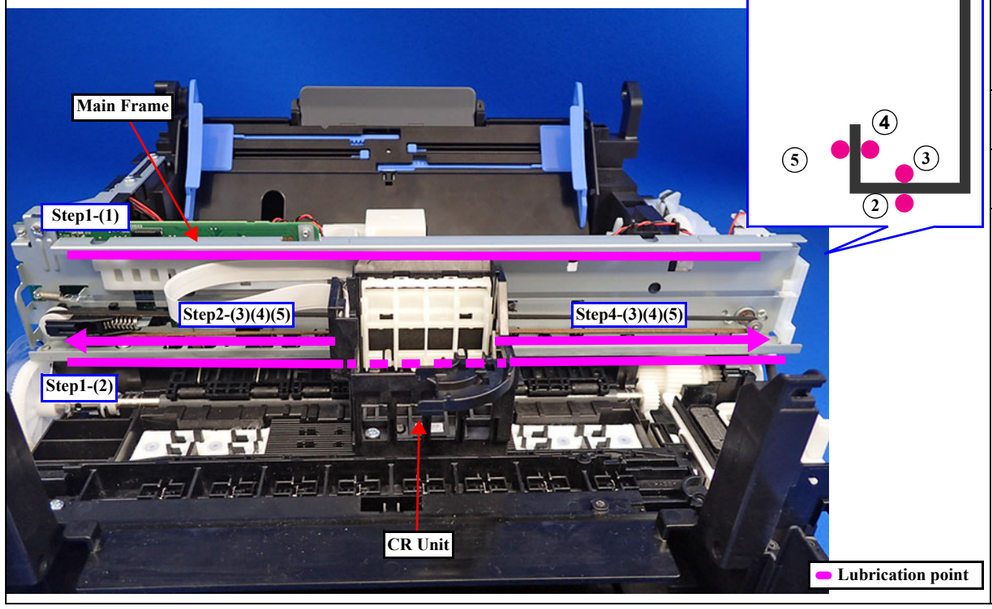
<Lubrication Point>
Contact point with ASF Hopper Assy and Shaft LD Assy

<Type>
G-97

<Application Amount>
0.05g

<Remarks>
- ☐ Apply with injector.
- ☐ No excess lubrication.
- ☐ No contamination to other parts.
- ☐ If over than 7mm from edge of ASF Hopper Assy, encountered contamination parts due to excess grease to paper when set paper.
- ☐ Not excess grease to inside portion of ASF Hopper Assy, because encountered contamination parts due to excess grease to paper when set paper.

Figure 5-6. Lubricating the ASF Hopper Assy



<Part supply as ASP>
None
<Lubrication status when supplied as ASP>
Not lubricated

<Lubrication Point>
Contact points with the Main Frame and the CR Unit

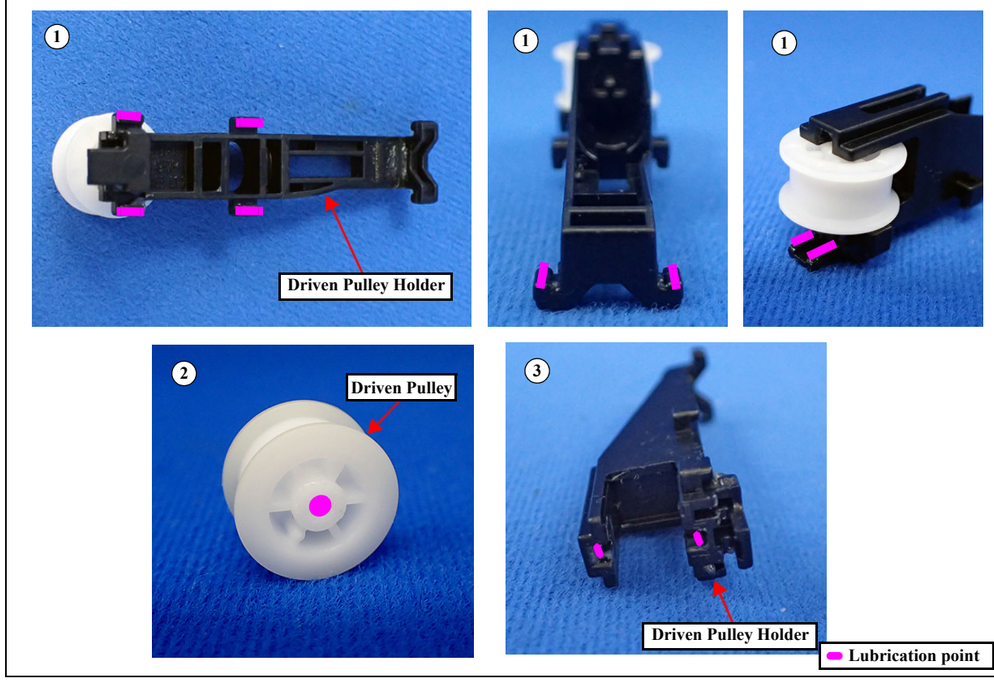
<Type>
G-97

<Application Amount>
0.15 g/line

<Remarks>
- ☐ After applying with injector, rub off excess grease.
- ☐ After Paper Guide Upper Left is attached, Lubricate in the procedure given below.

1. Lubricate the part indicated by (1)(2).
2. Move CR Unit to the center and lubricate 80 digit side of (3)(4)(5).
3. Move CR Unit to the edge of 80 digit side.
4. Lubricate 0 digit side of (3)(4)(5).

Figure 5-7. Lubricating the Main Frame Assy



<Part supply as ASP>
None
<Lubrication status when supplied as ASP>
Not lubricated

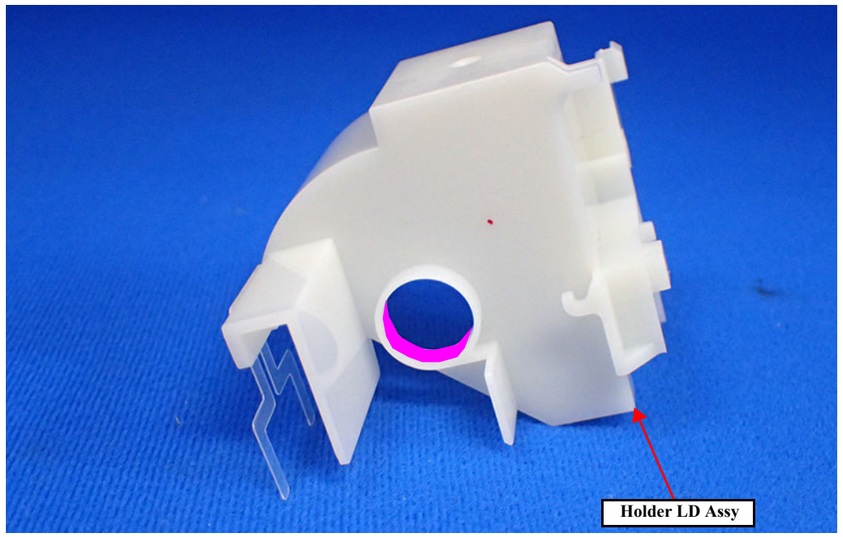
<Lubrication Point>
1. Contact points between Driven Pulley Holder and back side of Frame Main (eight points)
2. Shaft hole of Driven Pulley
3. Contact points between Driven Pulley Holder and Shaft Pulley Driven (two points)

<Type>
G-97

<Application Amount>
1. 0.06 g/position
2. 0.01 g/position
3. 0.01 g/position

<Remarks>
Apply with injector.

Figure 5-8. Lubricating the Pulley Driven & Holder Pulley Driven



<Part supply as ASP>
None
<Lubrication status when supplied as ASP>
Not lubricated

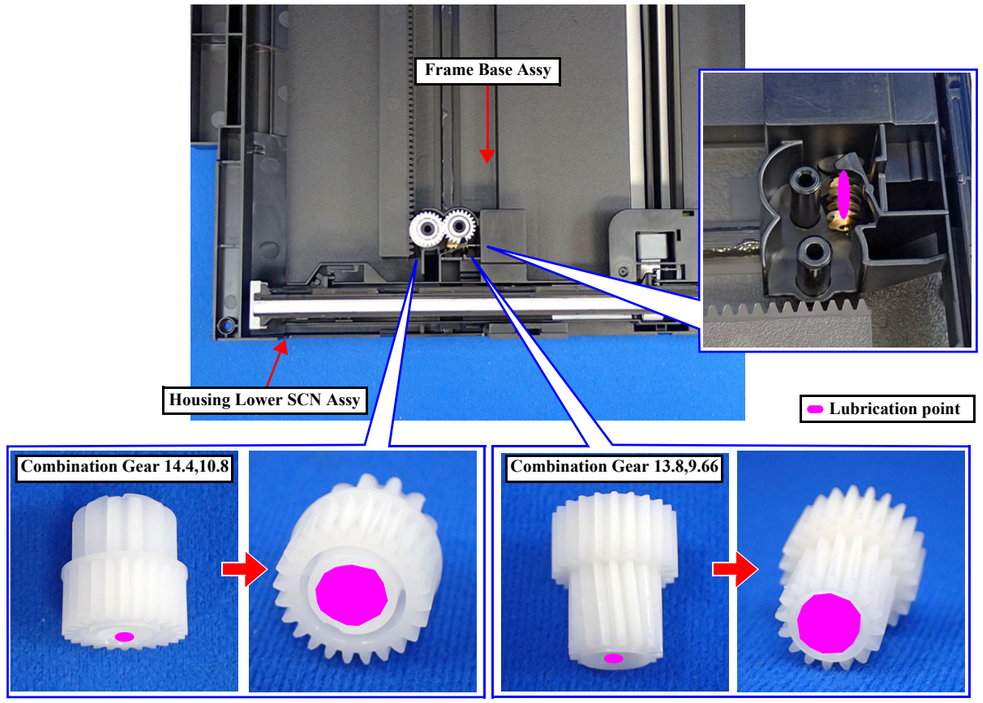
<Lubrication Point>
Hole of Holder LD Assy

<Type>
G-96

<Application Amount>
Appropriate amount

<Remarks>
- ☐ Apply with Flux Dispenser.
- ☐ Stir G-96 before use.

Figure 5-9. Lubricating the Holder LD Assy



<Part supply as ASP>
Scanner Unit
<Lubrication status when supplied as ASP>
Lubricated

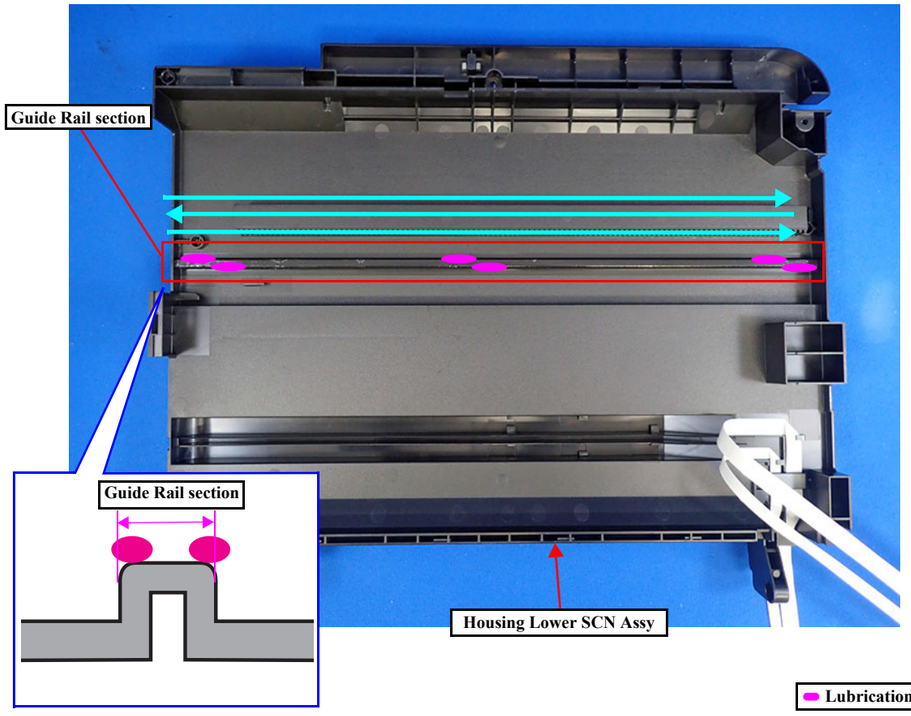
<Lubrication Point>
1. Teeth part of Scanner Motor Pinion Gear
2. Shaft hole of Combination Gear 14.4,10.8
3. Shaft hole of Combination Gear 13.8,9.66

<Type>
G-45

<Application Amount>
1. 0.03 g
2. 0.01 g
3. 0.01 g

<Remarks>
- ☐ Apply with injector.
- ☐ When lubricating the Combination Gears, spread grease in circular motion (3x) with brush and no excess lubricant on teeth.

Figure 5-10. Lubricating the Scanner Unit (1) (Except for L1210/L1230 Series)



<Part supply as ASP>
Scanner Unit
<Lubrication status when supplied as ASP>
Lubricated

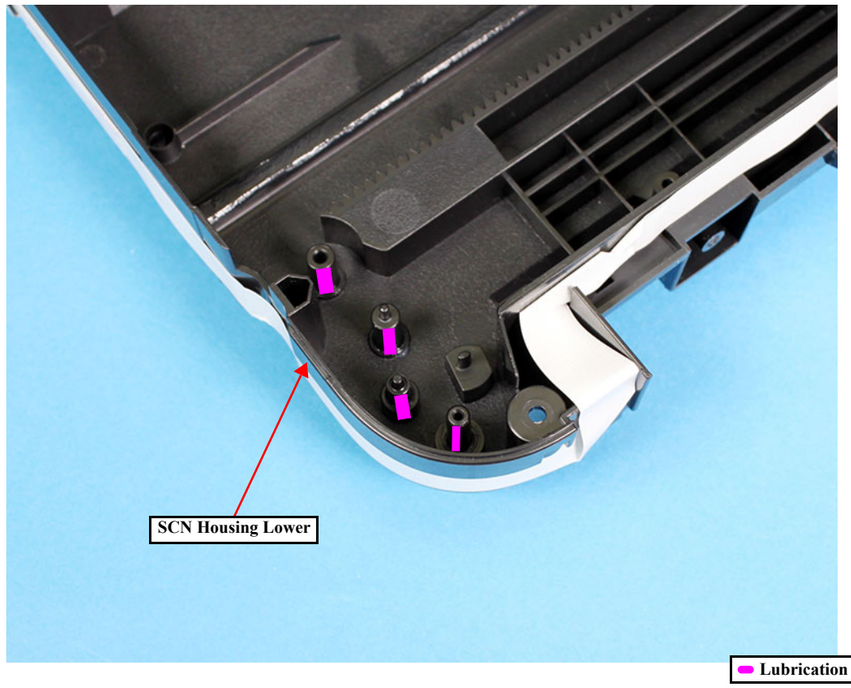
<Lubrication Point>
Guide rail section of Housing Lower SCN Assy (six points)

<Type>
G-45

<Application Amount>
0.03 g/position

<Remarks>
- ☐ Lubricate in the procedure given below
1. Apply grease with injector to six points shown in the left figure.
2. Using a brush, spread grease side to side three times as shown by the arrows.
- ☐ Be careful not to lubricate parts other than specified part and rub off excess grease.

Figure 5-11. Lubricating the Scanner Unit (2) (Except for L1210/L1230 Series)



<Part supply as ASP>
Supplied as the Scanner Unit
<Lubrication status when supplied as ASP>
Lubricated

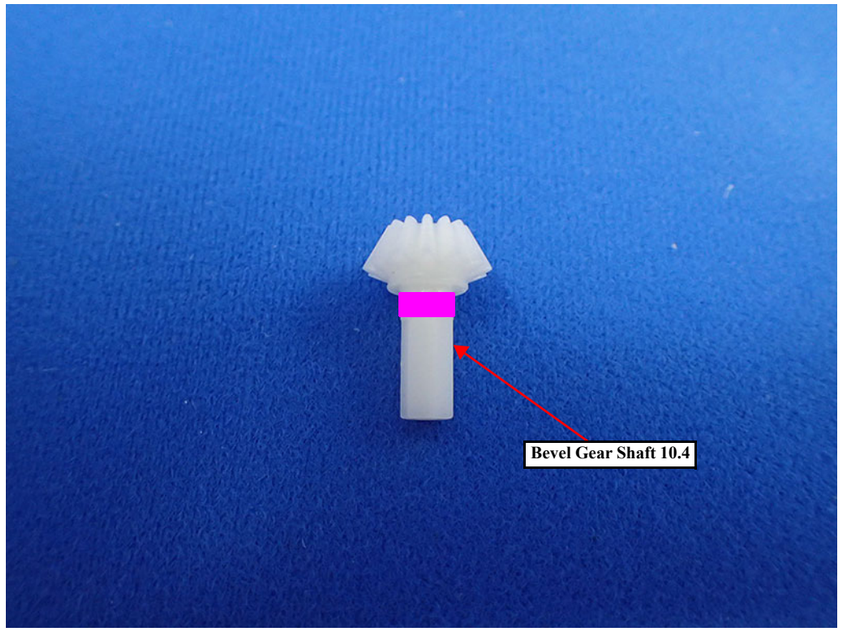
<Lubrication Point>
Shaft part of SCN Housing Lower (four points)

<Type>
G-45

<Application Amount>
Φ1 mm x 5 mm

<Remarks>
- ☐ Apply with injector
- ☐ Be careful not to lubricate parts other than specified part and rub off excess grease.

Figure 5-12. Lubricating the Scanner Unit (3) (ET-4800/L5290/L5310 Series only)



<Part supply as ASP>
Supplied as the ADF Unit
<Lubrication status when supplied as ASP>
Lubricated

<Lubrication Point>
Shaft part of Bevel Gear Shaft 10.4

<Type>
G-97

<Application Amount>
0.03 g

<Remarks>
- ☐ Apply with injector half around the shaft.
- ☐ Be careful not to lubricate parts other than specified part and rub off excess grease.

Figure 5-13. Lubricating ADF Unit (ET-4800/L5290/L5310 Series only)

CHAPTER

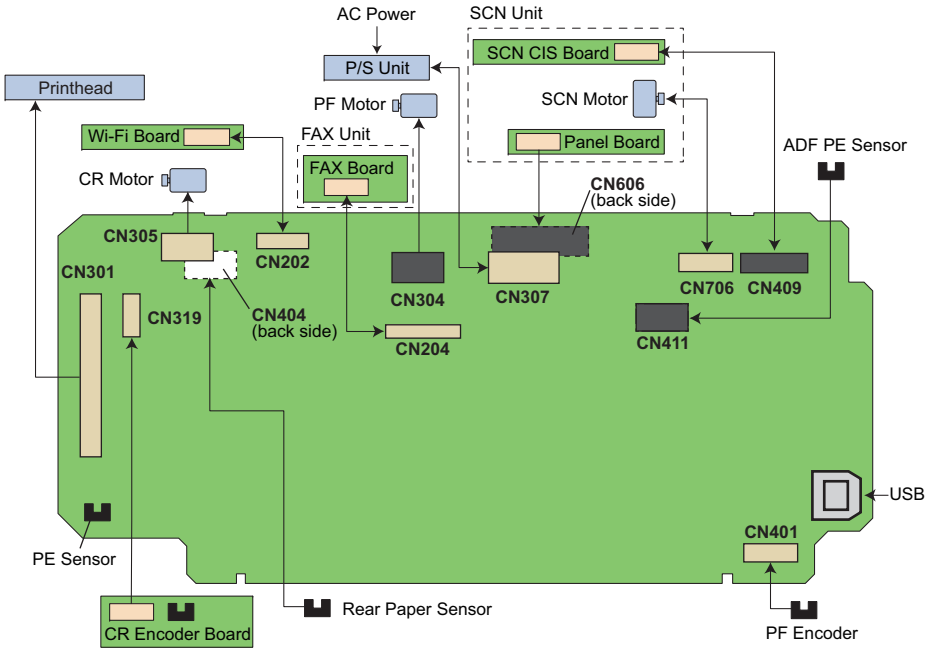
6

APPENDIX

6.1 Connector Diagram

Cable connections of this printer are shown below.

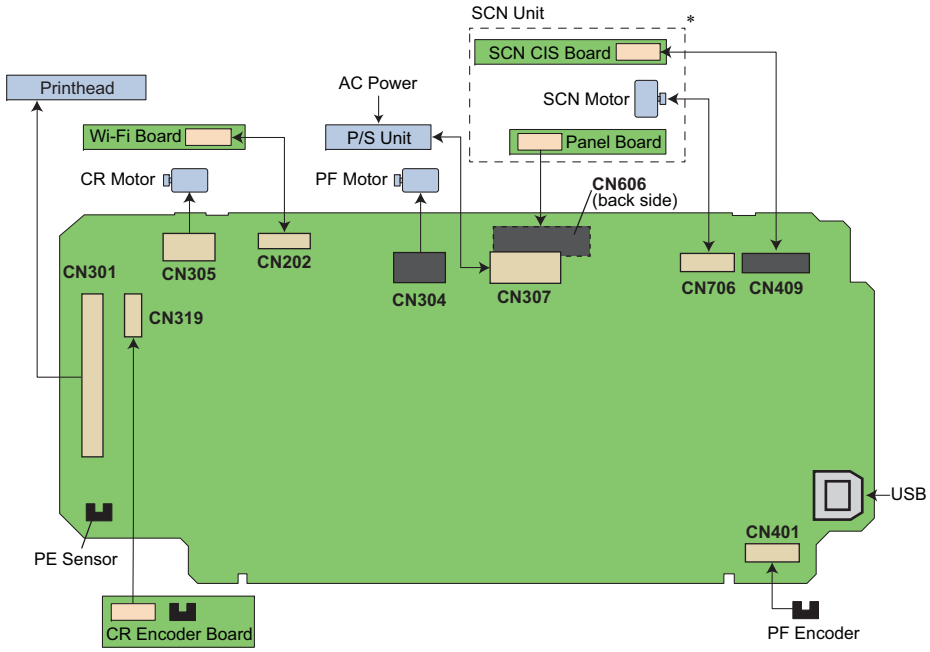
- ET-4800/L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/ L3260/L3280 Series



Note:CN204/CN411 are only for ET-4800/L5290/L5310 Series

Figure 6-1. ET-4800/L5290/L5310 Series

- ET-2400/ET-2810/ET-2860/L3250/L3270 Series/ET-1810/L1250/L1270 Series



Note "*": Except for ET-1810/L1250/L1270

Figure 6-2. ET-2400/ET-2810/ET-2860/L3250/L3270 Series

☐ L3210/L3230 Series/L3200 Series

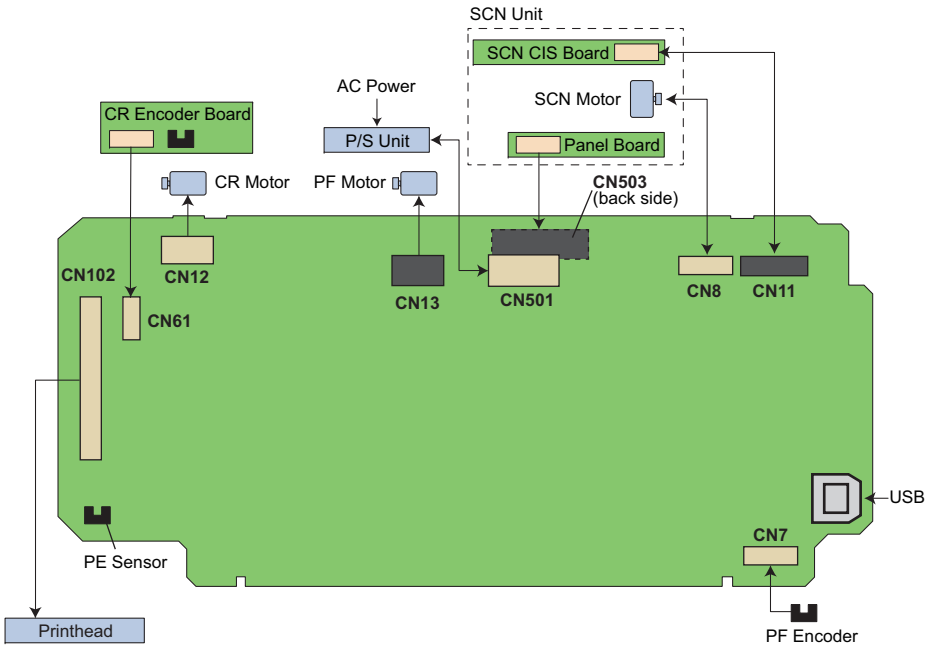


Figure 6-3. L3210/L3230 Series/L3200 Series

☐ L1210/L1230 Series

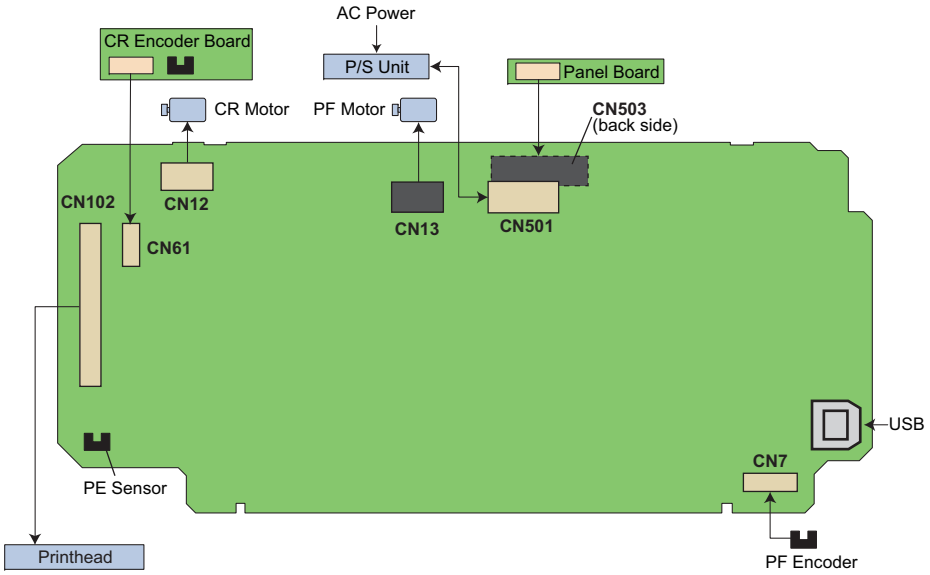


Figure 6-4. L1210/L1230 Series/L3200 Series

6.2 Head Fuse

Head fuse of this printer is shown below.

☐ ET-4800/L5290/L5310 Series/ET-2400/ET-2810/ET-2860/L3250/L3270 Series

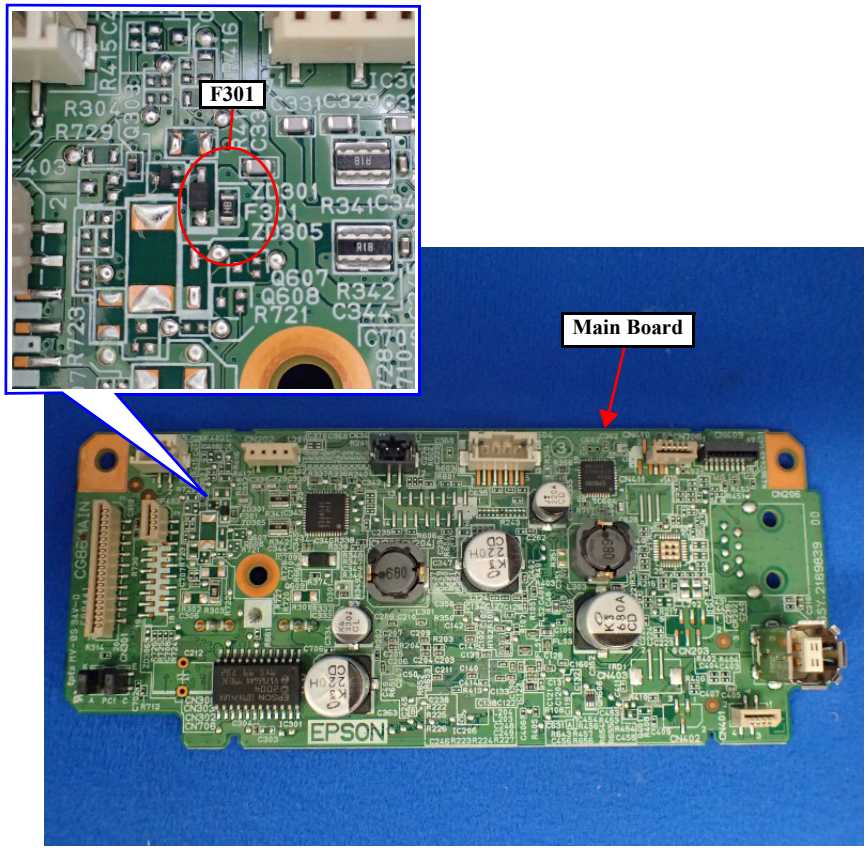


Figure 6-5. ET-4800/L5290/L5310 Series/ET-2400/ET-2810/ET-2860/ L3250/L3270 Series

☐ L3210/L3230 Series/L3200 Series/L1210/L1230 Series/ET-1810/L1250/ L1270 Series

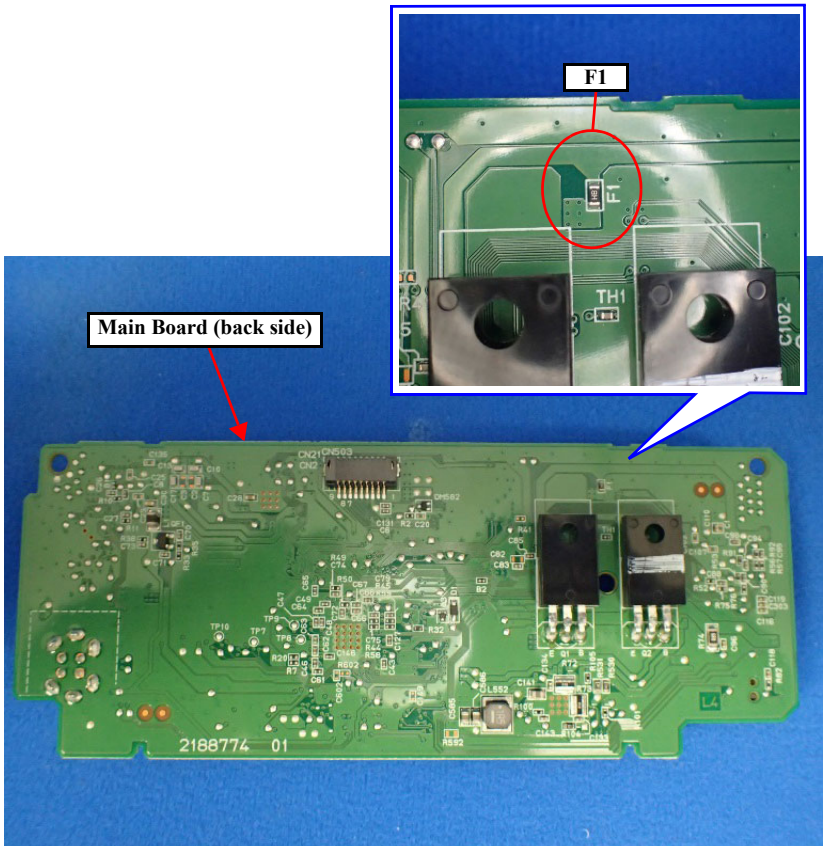


Figure 6-6. L3210/L3230 Series/L3200 Series/L1210/L1230 Series/ET-1810/L1250/L1270 Series

6.3 Protection for Transportation

This section explains specific points of note regarding packaging after repairs are completed.

6.3.1 Securing the Scanner Cover Assy (ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series/ET-2400/ET-2810/ET-2860/L3250/L3270 Series/L3210/L3230 Series/L3200 Series only)

- Purpose

  To prevent damaging the Scanner Cover Assy by shock during transportation.

- Risk if it is not performed.

  Damage to the Scanner Cover Assy due to vibration during transport.

- Preparation

  Prepare two pieces of packing tape
  (Length: 150 mm, width: 14 mm, fold on the end: 5 mm)

- Method

  Secure the Scanner Cover Assy as shown below.

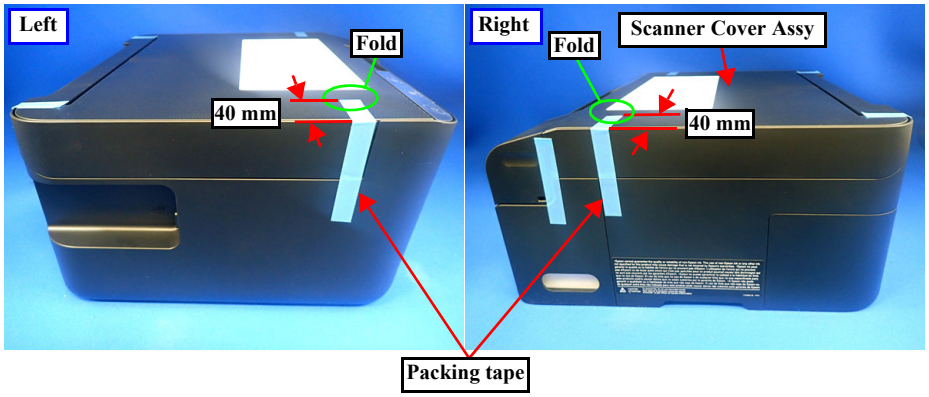


Figure 6-7. Securing the Scanner Cover Assy

6.3.2 Securing the ADF/SCN Unit Assy (ET-4800/L5290/L5310 Series only)

- Purpose

  To prevent damaging the ADF/SCN Unit Assy by shock during transportation.

- Risk if it is not performed.

  Damage to the ADF/SCN Unit Assy (Document Support) due to vibration during transport.

- Preparation

  Prepare a piece of packing tape A and a piece of packing tape B.

  - Packing tape A) Length: 220 mm, width: 14 mm, fold on the end: 5 mm
  - Packing tape B) Length: 100 mm, width: 14 mm, fold on the end: 5 mm

- Method

  Secure the ADF/SCN Unit Assy as shown below.

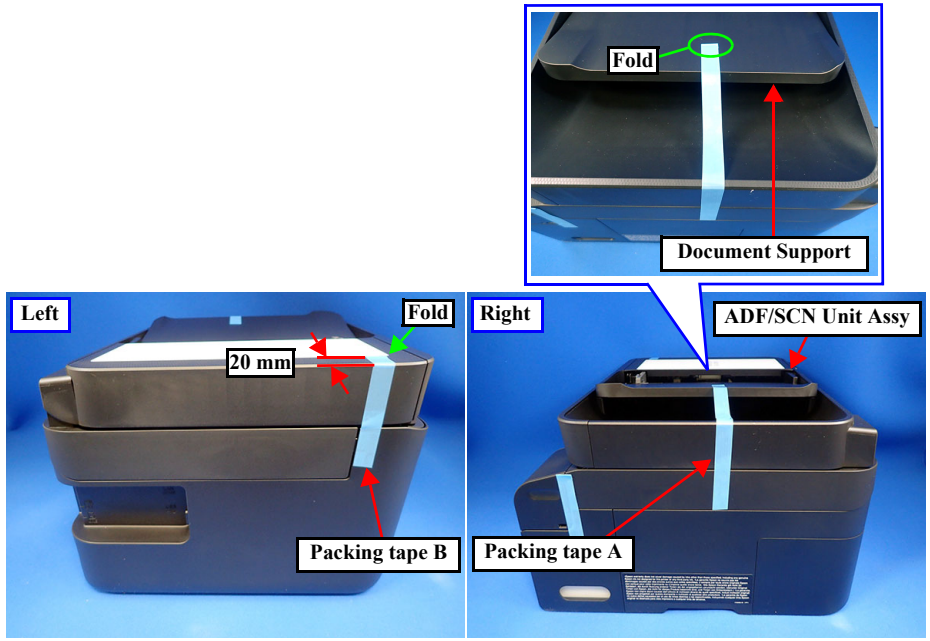


Figure 6-8. Securing the ADF/SCN Unit Assy

6.3.3 Securing the Panel Unit (ET-4800/L5290/L5310 Series/ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series only)

- Purpose

  To prevent damaging the Panel Unit by shock during transportation.

- Risk if it is not performed

  Damage to the Panel Unit due to vibration during transport.

- Preparation

  Prepare a piece of packing tape
  (Length: 100 mm, width: 14 mm, fold on the end: 5 mm)

- Method

  Secure the Panel Unit as shown below.

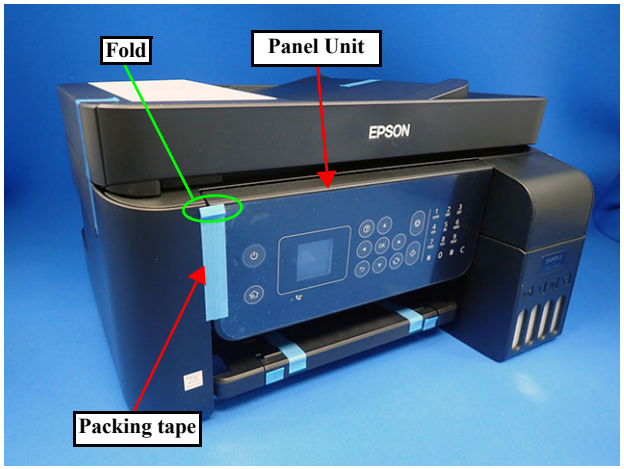


Figure 6-9. Securing the Panel Unit (ET-4800/L5290/L5310 Series ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series only)

6.3.4 Securing the Cover Front Assy (Except for ET-4800/L5290/L5310 Series)

- Purpose

  To prevent damaging the Cover Front Assy by shock during transportation.

- Risk if it is not performed

  Damage to the Cover Front Assy due to vibration during transport.

- Preparation

  Prepare two pieces of packing tape
  (Length: 80 mm, width: 14 mm, fold on the end: 5 mm)

- Method

  Secure the Cover Front Assy as shown below.

ET-2400/ET-2810/ ET-2860/L3250/ L3270 Series/L3210/

L1210/L1230 Series/ ET-1810/L1250/L1270 Series

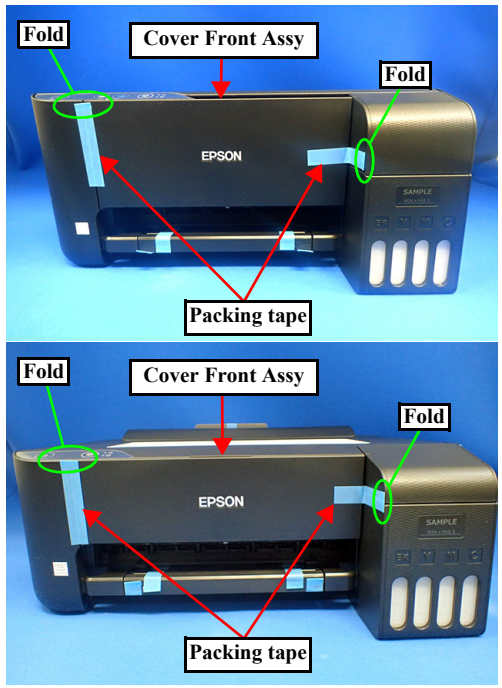


Figure 6-10. Securing the Cover Front Assy (Except for ET-4800/L5290/L5310 Series)

6.3.5 Securing the Paper Support

- Purpose

  To prevent damaging the Paper Support by shock during transportation.

- Risk if it is not performed

  Damage to the Paper Support due to vibration during transport.

- Preparation

  Prepare a piece of packing tape
  (Length: 100 mm, width: 14 mm, fold on the end: 5 mm)

- Method

  Secure the Paper Support as shown below.

The photos used here is ET-2400/ET-2810/ET-2860/L3250/L3270 Series, but for other models, secure the Paper Support in the same

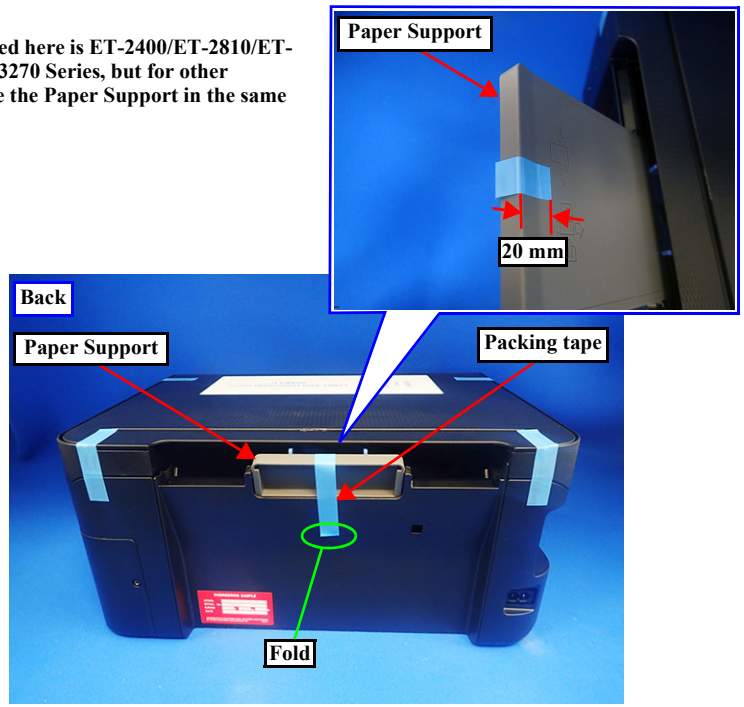


Figure 6-11. Securing the Paper Support

6.3.6 Securing the Cover ASF (ET-2800/ET-2820/ET-2870/ET-2870U/L3260/L3280 Series/ET-2400/ET-2810/ET-2860/L3250/L3270 Series/L3210/L3230 Series/L3200 Series only)

- Purpose

  To prevent damaging the Cover ASF by shock during transportation.

- Risk if it is not performed

  Damage to the Cover ASF due to vibration during transport.

- Preparation

  Prepare two pieces of packing tape
  (Length: 80 mm, width: 14 mm, fold on the end: 5 mm)

- Method

  Secure the Cover ASF as shown below.

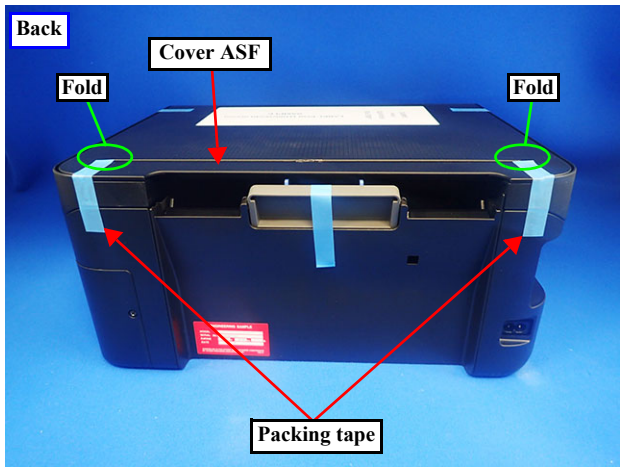


Figure 6-12. Securing the Cover ASF

6.3.7 Securing the Cover Tank

- Purpose

  To prevent damaging the Cover Tank by vibration during transportation.

- Risk if it is not performed

  Damage to the Cover Tank due to vibration during transport.

- Preparation

  Prepare a pieces of packing tape

  - ET-4800/L5290/L5310 Series/ET-2400/ET-2810/ET-2860/L3250/ L3270 Series/L3210/L3230 Series/L3200 Series
    Length: 80 mm, width: 14 mm, fold on the end: 5 mm
  - L1210/L1230 Series/ET-1810/L1250/L1270 Series
    Length: 60 mm, width: 14 mm, fold on the end: 5 mm

- Method

  Secure the Cover Tank as shown below.

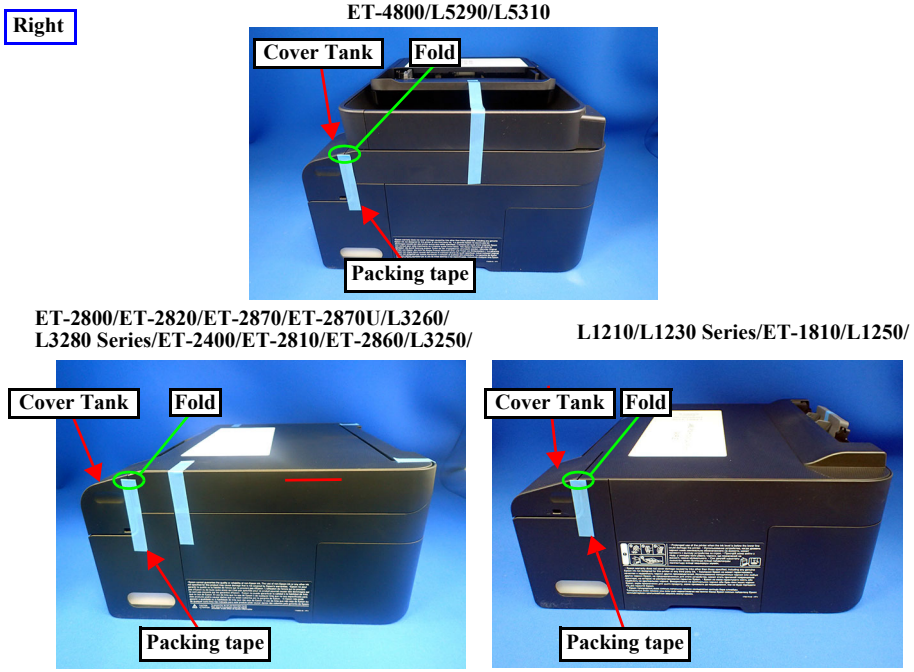


Figure 6-13. Securing the Cover Tank

6.3.8 Securing the Stacker Assy

- Purpose

  To prevent damaging the Stacker Assy by vibration during transportation.

- Risk if it is not performed

  Damage to the Stacker Assy due to vibration during transport.

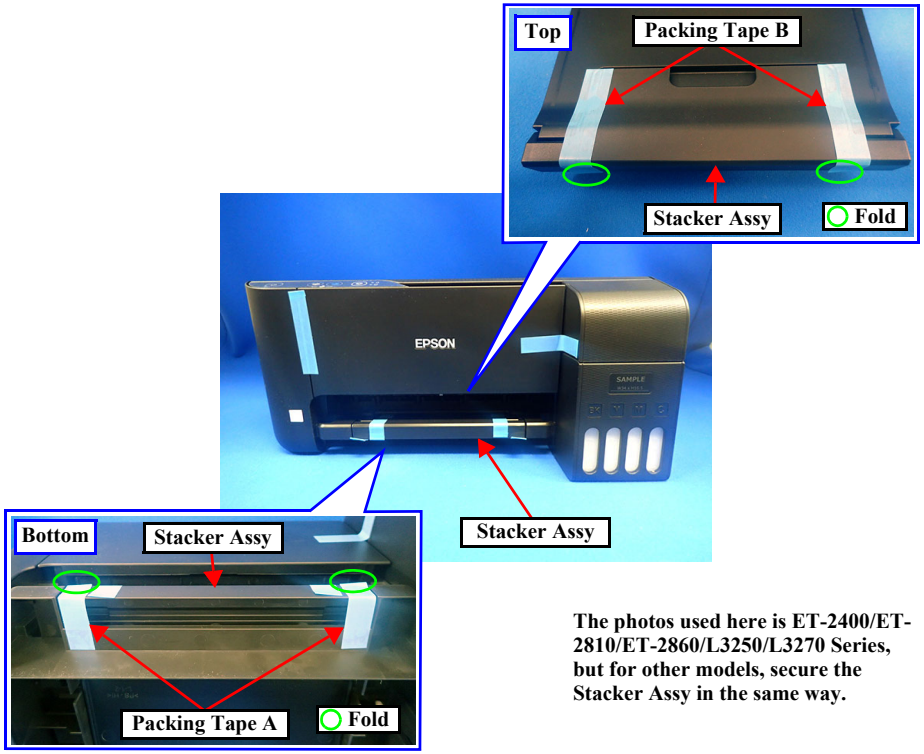
- Preparation

  Prepare two pieces of packing tape A and two pieces of packing tape B.

  - Packing tape A) Length: 50 mm, width: 14 mm, fold on the end: 5 mm
  - Packing tape B) Length: 70 mm, width: 14 mm, fold on the end: 5 mm

- Method

  Secure the Stacker Assy as shown below.



The photos used here is ET-2400/ET-2810/ET-2860/L3250/L3270 Series, but for other models, secure the Stacker Assy in the same way.

Figure 6-14. Securing the Stacker